Railway Age

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EDITORIAL

Railway Age

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The Rent We Have to Pay

The idea of a railroad wanting its patrons to feel that they are getting more than their money's worth is not entirely the result of competition or regulation, but is due, primarily to the growth of a real desire to serve the community. This has properly been called service. The greatest difficulty, however, has been to get the idea of service to the employees, especially those who come in contact with the patrons of the railroad. There has always been a counteracting influence set up by various organizations and societies which have failed to keep in step with new ideas and developments in modern industry. This, of course, has made it difficult for many employees to understand why they should seek to render service aside from that for which they think they are actually paid. In other words, they deprive themselves of the joy of giving. A different interpretation of service from that which we have been accustomed to hear was given by Calvin W. Rice, secretary of the American Society of Mechanical Engineers, when introducing the new members at the annual dinner of that organization, which is unique for its simplicity. "Service is the rent we pay for the space we occupy."

How Government Railways Increase Their Efficiency

The government of India has decided to separate the railway budget from the general budget, thereby illustrating a tendency which is becoming the rule where the railways are owned by the government, i. e., of operating them more and more as private railways are, rather than as ordinary non-commercial governmental departments. What is the significance of this? Simply that the semi-political, red-tape methods of government administrative departments all over the world cannot secure the results obtainable under the corporate form of organization. In surveying the government-owned railways of the world one could almost say that they vary in efficiency just about in proportion to the extent to which they have been able to assume the characteristics of private enterprises. There are, of course, certain places in the world where government ownership is a virtual necessity because light traffic makes it impossible for private lines to prosper. Since government railways are efficient to the extent that they are able to imitate the organization and methods of private lines—and not to the extent to which they adhere to the ordinary form of a governmental administrative department—cannot the question fairly be raised—"Why government operation at all except in locations where no private line could afford to operate?"

Car Department Service Analyzed By L. K. Sillcox

A comprehensive and critical analysis of car department policies and methods was offered in a paper read at the December 8 meeting of the Chicago Car Foremen's Association by L. K. Sillcox, general superintendent of motive power of the Chicago, Milwaukee & St. Paul, as reported elsewhere in this issue. The paper is broad in scope, outlining the function of the car department in providing an adequate number of freight and passenger cars, maintained in condition for safe operation at minimum cost. The need of individual responsibility and initiative is stressed and Mr. Sillcox maintains that the probable lack of these qualities is a serious objection to any general car pooling plan which involves having a single organization to construct, maintain and operate all of the freight cars in the country. It is pointed out in the paper that car design must anticipate not only the universal use of cars but also the building of them as far as possible of interchangeable parts with the result that maintenance costs will be minimized, storehouse stocks reduced and fewer cars tied up on foreign roads while waiting for repair material. Particular emphasis is placed on ways and means whereby the car department and other departments with which it comes in contact can co-operate to secure the more prompt and economical movement of cars. Possible savings in many routine operations are explained. In some cases, as for example coach cleaning, they may seem trivial and unimportant but they will appeal to practical car department and operating men as the small items which, unless given the proper attention, aggregate many dollars of railway expense. The paper closes with a careful consideration of such factors in the handling of men as hiring, advancement and discipline. Mr. Sillcox's paper is a real contribution to the literature on American railroad car department practices. It warrants careful study by those interested in more efficient car department and railroad operation.

A Knowledge of Psychology Can Help

There probably never has been a successful executive in any walk of life who has not been at the same time an able practical psychologist. He may understand little of the theories of the subject, but he must have a practical knowledge of men and how they react to his treatment. Academic psychologists, who have of late years shifted the emphasis of their investigations from the conscious mind to the unconscious, are beginning to understand rather better than formerly some of the hidden impulses which govern human behavior. Thus it is becoming possible to understand some of the principles by which executives, generally acting instinctively, have acquired leadership over men. If discovery of the laws of psychology continues at the present rate, it may one day be possible to make executives of persons with little natural talent in that direction simply by teaching them the principles to be followed. Be that as it may, certainly psychology has already made discoveries the knowledge of which should enable almost any executive to improve his ability to handle men. As a case in point, take the findings of the psychologists with respect to the feeling of inferiority. This is a feeling which, in its pure and unadulterated form, human consciousness positively refuses to entertain. Impress on a man a conscious sense of his own inferiority and beware! That man will do something to drive away this feeling or to compensate for it and what he does may be disastrous, especially if it is possible for him to combine with others who are fighting against the same feeling. Everyone knows that the British workingman is kept always conscious of his social inferiority. May not the strength of the British Labor Party be due to some extent to his desire to compensate for

this feeling of social inferiority with a feeling of political strength? Employers generally have during the past few decades noticed on the part of workmen a decline in craftsmanship and pride in work well done. Everybody knows that it is much easier to hire a good clerk for $25 a week than an equally good carpenter or mason for two or three times as much. Why? E. J. Mehren of the McGraw-Hill Company, speaking before a group of builders in New York recently, laid the blame to the social standard under which "white-collar" jobs are more highly esteemed than manual work. He recommended, among other things, as a corrective the provision of adequate wash-rooms on building jobs to enable building craftsmen to go to and from work in polite attire. Books might be—and have been—written on the effect of the feeling of inferiority on human actions—and yet the discovery of the force of this feeling and its effect on behavior is but one of the advances which have been made in psychology in recent years. The human factor is one of the most important in railroading. Therefore, just as a knowledge of engineering and economics is required for successful operation from a technical standpoint, so a knowledge of psychology is needed for successful operation from a standpoint of human relations.

How Net Operating Income Has Been Increased

THE MOST OUTSTANDING and gratifying result of railway operation in September and October was the large increase in net operating income that occurred in these months. Net operating income in the first eight months of this year was almost $70,000,000 less than in the corresponding months of last year. In September and October it was almost $49,000,000 more than in the corresponding months of last year. Freight business has continued to be large since then, and it now seems probable that the total net for the year will exceed that of last year.

Our calculations indicate that the net return earned upon the tentative valuation in the first ten months of this year was at the annual rate of 4.96 per cent. They also indicate, however, that in September and October the net return earned was at the annual rate of 5.64 per cent upon the tentative valuation. Probably the rate of return earned in these months was somewhat less than this, since our calculations did not make any allowance for new capital that had been invested in the present year. However, the facts show that while the roads have not thus far this year earned at the annual rate of 5¾ per cent to which the Interstate Commerce Commission has held they are entitled, they recently have been approximating closely to it. With the prospect that the volume of freight business will continue to be large there is also good prospect that if no premature reductions of rates are made the railways finally in 1925 may be able to earn the return to which the Commission has said they are entitled, but which they have not earned in any year of the four since the Commission's original ruling as to a fair return was made.

The recent increase in net operating income has been so substantial that it is worth while to inquire what has caused it. Of course, it would not have occurred if a large increase in freight business had not occurred. It is not, however, principally due to this. Total car loadings in September and October were larger than in the corresponding months of last year, but the number of tons loaded per car and the number of tons carried one mile were not quite as large. The true cause of the recent big increase in net operating income has been the increase in the efficiency and economy of operation which has been steadily in progress ever since the roads were returned to private operation. The operating expenses of the Class I roads in September and October were almost $76,600,000 less than last year. This reduction of operating expenses was partly offset by increases in taxes and some other causes. Otherwise the increase in net operating income would have been still larger.

Operating expenses in these months were the lowest in seven years except in 1921, when the most drastic retrenchment was being practiced. The ratio of operating expenses to total revenues was only about 70½ per cent, the lowest figure that has been reached except in one month since 1917.

There has been much said, and properly said, regarding the achievement of the railways within recent years in improving the transportation service rendered the public. A still greater achievement however, has been the reduction effected in operating expenses. In September and October, 1920, they averaged about $17,000,000 a day. In these months in 1923 they averaged $14,129,000 a day. In the same months of 1924 they averaged only $12,872,000 a day. This was about $4,130,000 a day less than in 1920 and about $1,256,000 a day less than in 1923.

The increase of freight business which is now occurring doubtless will arrest the downward trend of expenses, although they may continue to become less in proportion to total earnings.

How have these large reduction of expenses been effected, and especially how have they been effected during the last year? The latest detailed statistics available are those for September, and they throw much light upon this question. Rates of pay of employees have increased, the average earnings per employee in September, 1923, being $131 and in September, 1924, $134. On the other hand there have continued to be reductions in the number of employees. The number in September, 1923, was 1,945,917 and in 1924, 1,801,296, a decline of 144,621. These reductions have been made pretty uniformly in all classes of the service. For example, there was a reduction of 29,288 employees in the maintenance of way department, 68,076 in the maintenance of equipment and stores department and 26,728 in the train and engine service.

The total reduction of operating expenses in September was $34,361,000. Of this about $13,500,000 was due to reduction of the operating payroll. The reduction of the payroll due to the reduction of the number of employees would have exceeded $18,000,000 if there had not been an increase in the average wage paid.

A substantial part of the reduction in the number of employees was made possible by increased efficiency in making up and handling trains. The average number of cars per freight train in September was 43.3 which was the highest record of this kind ever made and exceeded the number of cars per train in September, 1923 by 2.1. The average number of gross tons per train—which includes the weight of cars and their loads—was 1,674 tons. This also was the highest record ever made and compared with 1,595 tons in September, 1923. The average number of tons of freight hauled per train was 759. This was the highest record ever made except in one month of 1920. Probably all previous records of this kind were broken in October.

A large saving in the cost of fuel was made. This was due both to an increase in the efficiency with which fuel was used and to a reduction of its cost per ton. The amount of coal consumed in freight service per one thousand gross ton miles was 136 pounds as compared with 146 in September of last year. The average cost of coal per ton was $2.91 as compared with $3.30. The saving in the amount paid for fuel amounted in September to about $15,000,000.

It will be seen that the reductions of the payroll and of the total cost of fuel account for approximately $28,500,000, or about three-fourths, of the total reduction of operating expenses in September.

It would be difficult to exaggerate the credit that the of-

ficers of the railways of the United States deserve for the improvement they have effected since the railways were returned to private operation in efficiency and economy of operation. It is not far from the truth to say that up to the present time the public, especially the travelling and shipping public, have received all the benefit that has been derived from the remarkable achievements for which railway officers deserve the credit.

According to the statistics of the Interstate Commerce Commission the average return earned by the railways on their property investment in the ten years ending with 1917—before the tentative valuation was made—was 5.3 per cent. According to the same authority the return earned on the property investment in 1921 was 2.96 per cent; in 1922, 3.74 per cent, and in 1923 4.56 per cent, an average for the three years of approximately 3.75 per cent. The return earned on property investment in the first ten months of the present year, as computed by the Bureau of Railway Economics, was at the annual rate of 4.31 per cent. These figures show that although the Transportation Act directs that the railways shall be so regulated as to enable them to earn a fair return, consideration being given to the need of the country for an adequate increase of its transportation facilities, the return they actually have earned since the Transportation Act has been in effect has been relatively much less than it was before that law was enacted.

Apparently, as a result of the unprecedented efficiency with which the railways have been managed within recent years the time has at last come when, with the present rates, it is possible for them to earn a fair return for a considerable period. Surely the Railroad Labor Board will in future so regulate wages and the Interstate Commerce Commission will in future so regulate rates as not only to give the employees and the public that to which they are entitled, but so also as to enable investors in railway securities to get the return to which they are entitled.

Heavier Loading of Cars

THE WILLINGNESS shown by shippers to co-operate with the railways in increasing the efficiency and economy of railway operation is illustrated by a leaflet entitled "Why Not Buy One Ton More?" which has been published and distributed by the Southwest Regional Shippers' Advisory Board.

This board, at one of its recent meetings, discussed the subject of heavier car loading. It then adopted resolutions setting forth that "failure on the part of shippers to make greater use of the car capacity available creates an enormous waste in transportation, which operates eventually to the detriment of both the railroads and the public," and recommending "to all shippers and receivers of freight that a greater effort be made to increase the car-load to, as nearly as practicable, the capacity of the car used." It stated "that nothing is contemplated by this resolution that will force a receiver of carload freight to order in such quantities as he cannot afford, but to encourage increases when same may be made without detriment."

In the leaflet in which this resolution was published certain striking figures presented by President Baldwin of the Missouri Pacific showing the large savings that would be made by increasing the average load per car were quoted. The Southwest Regional Board pointed out that "there is probably nothing more important to business than a dependable car supply, and each ton added to your order helps that much to insure a dependable supply. And, too, any savings effected by the railroads through your co-operation in this matter must necessarily be shared with you in one way or another."

The effects produced by the unnecessarily light loading of cars and the advantages that may be derived from heavier loading seldom or never have been better stated. Furthermore, there is especial need for emphasizing these matters at the present time. The *Railway Age* has recently called attention to the steady decline that has occurred in the average loading of cars since 1918. Although the average capacity of cars has been constantly increasing, the average load per car thus far in 1924 has been the smallest in seven years. This small average load during part of the present year was largely due to the fact that coal was not being shipped in normal volume. Even since the movement of coal has increased, however, the average load per car has continued to be excessively low. Even in September, when coal traffic was about normal, the average load per loaded car was less than last year, being only 27 tons as compared with 27.4 tons last year. This was only about 61 per cent of the present average capacity of cars.

All indications are that the volume of freight business to be moved will be larger for several months than it ever has been before. There is still a surplus of cars, but it is by no means inconceivable that without an increase in average tons per car the railways and shippers may one of these days find themselves confronted with a car shortage instead of a car surplus.

Furthermore, it is essential to the best interests of all concerned that the railways shall be operated as economically as possible. The greatest possible economy in operation is necessary not only to enable the railways to earn an adequate net return, but also in time to make practicable reductions of rates. The *Railway Age* recently published statistics indicating that if the average loading of cars should be so increased that there would be restored the same ratio between the average load and average capacity of cars that prevailed in 1918, there would result a saving in railway expenses of at least a quarter of a billion dollars annually. The shippers of the country are bound, in the long run, to get their share of the benefit of increased economy of operation.

The railways in every part of the country should bring to the attention of shippers the desirability and need of heavier loading of cars. Probably they can do this better through the Regional Shippers' Advisory Boards than through any other channel. These boards represent all classes of shippers, and representations made by them to the shippers regarding what they should do in their own interest seem sure to have good results.

That International Congress

THE SUGGESTION has already been advanced that the International Railway Congress be prevailed upon to select this country for the next meeting after the one scheduled for London next year. This has been hailed as a good suggestion, particularly in view of the claim of this country by reason chiefly of the lapse of 25 years since the Congress was last held on this side of the Atlantic. But since this meeting of the International Railway Congress presumably will not be held until 1930, in conformity with the custom of meeting only once every five years, there may be an inclination to consider this suggestion as premature.

The fact is, however, that the meeting place of each International Railway Congress is definitely selected at the meeting previous thereto. This means that the 1930 meeting, while six years in the future, will be held at a place to be determined upon at the 1925 meeting. Now, the 1925 Congress, which is to be held in London, will be in session in less than six months. The American delegates to this meeting were selected long ago. It is obvious that if this country wants the next International Railway Congress, definite action must be taken soon to get it.

There is no avoiding the conclusion that the International

Railway Congress will feel disposed to consider the American petition for the next meeting upon the recollection of the fine reception accorded the Congress when it last met in this country in 1905, the continued interest which has been taken each year in the Congress by the American delegations and the further fact that it will have been 25 years since the Congress was last held here. But if the railways are determined to utilize every resource at their disposal to insure the success of their efforts in this direction they must not overlook the opportunity presented them in the proposal to celebrate the American railway Centennial.

It is proposed to hold this Centennial in 1930, the same year as the meeting of the International Railway Congress. The contemplated Centennial is the chief reason for getting the International Railway Congress to meet here then, by reason not only of the appropriateness of doing so, but by reason also of the belief that this Congress will contribute much to the success of the Centennial. Some doubt has been expressed as to the sufficiency of the Centennial argument in view of the fact that the International Railway Congress meets in London next year to celebrate a Centennial of the British railroads and therefore would require some other reason than a mere Centennial observance to influence their decision. But when it is considered among other factors that an interval of five years will elapse from the time of the London congress to the next congress, and the further fact that the proposal in this country contemplates not merely a Centennial celebration but nothing short of a great exposition marking progress generally from the beginning of our railroads, it is safe to say that a suggestion that the next International Railway Congress should be held here would receive friendly consideration.

At the present time no action has been taken by the railroads with reference to the Centennial movement. But it is inconceivable that the hundredth anniversary of rail transportation in this country will not be observed in some fashion. It is gratifying in this connection to note the action recently taken by the City Council of Chicago in calling for a meeting to discuss this matter. Whether or not it is advisable for the railroads to launch officially plans for a Centennial celebration, it is important that they take some action on this subject with reference to the International Railway Congress, even though such action consists of nothing more than the assurance which they are certainly safe in making, that there will be in 1930 some kind of an observance of the American railroad Centennial.

Articles in the December Railway Mechanical Engineer

Derailments of Locomotives on Curves, by Roy C. Beaver, assistant mechanical engineer, Bessemer & Lake Erie, and Marion B. Richardson, associate mechanical editor, *Railway Age.* An investigation of the mechanics of curve resistance in which is included the derivation of the factor of wheel bearing and a discussion of locomotive derailments. Page 721.

Discussion of New Car Interchange Rules. The application of Rule 32 was a subject which caused extensive debate at the twenty-third annual convention of the Chief Interchange Car Inspectors' and Car Foremen's Association of America. Page 737.

Safety Work in the Car Department, by W. A. Clark, general car foreman, Duluth, Missabe & Northern. An abstract of an address at the thirteenth annual congress of the National Safety Council held at Louisville, Ky. Gives an account of the methods pursued in performing 2,412,800 man hours of work with but a single accident. Page 744.

The Prevention of Hot Boxes on Freight Cars, by E. Von Bergen, air brake and lubricating engineer, Illinois Central. Shows how trouble can be prevented by thorough inspection, analysing the causes of hot boxes and periodical repacking. Page 749.

Reducing the Cost of Locomotive Repairs, by William S. Cozad, shop supervisor, Lehigh Valley. Contains a discussion of the application of modern production methods in locomotive repair shops. Page 751.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Annual Report of the Secretary of the Interior for the Fiscal Year Ended June 30, 1924. "The travel increase [to nat'l parks] was entirely in motor travel, the train travel to the parks showing a slight decrease." p. 89. Alaska Railroad operations, p. 112-113, with map, p. 154. 154 p. Pub. by Govt. Print. Off., Washington, D. C.

Annual Report of the Secretary of the Treasury on the State of the Finances for the Fiscal Year Ended June 30, 1924. Estimates of appropriations, 1925 and 1926, for Interstate Commerce Commission, Railroad Labor Board, and other governmental offices, p. 147-148. This table reprinted, with summary of report, in Annalist, December 8, 1924, p. 607. See also index to report under "Railroads," for government transactions with railroads. 451 p. Pub. by Govt. Print. Off., Washington, D. C. 60 cents.

Federal Valuation of Railroads, by M. A. Zook. A memorandum on history and methods of valuation. In Proceedings of the American Short Line Railroad Association, 1924, p. 115-133. Pub. by the American Short Line Railroad Association, Washington, D. C.

The Inter-Relationships of Business, by C. H. Markham. "This close inter-relationship of business has been developed through the service performed by the railroads, and it continues by grace of the continued service performed by them." Address at Cairo, Ill., November 18. 8 p. Pub. by the Illinois Central Railroad Co., Chicago.

Mundy's Earning Power of Railroads, 19th issue, compiled by Floyd W. Mundy. 490 p. Pub. by Jas. H. Oliphant Co., New York City.

Thirteenth Annual Report of the Chief Inspector, Bureau of Locomotive Inspection to the Interstate Commerce Commission. Data on locomotives, inspected, failures and causes, etc. 102 p. Pub. by Govt. Print. Off. 15 cents.

Periodical Articles

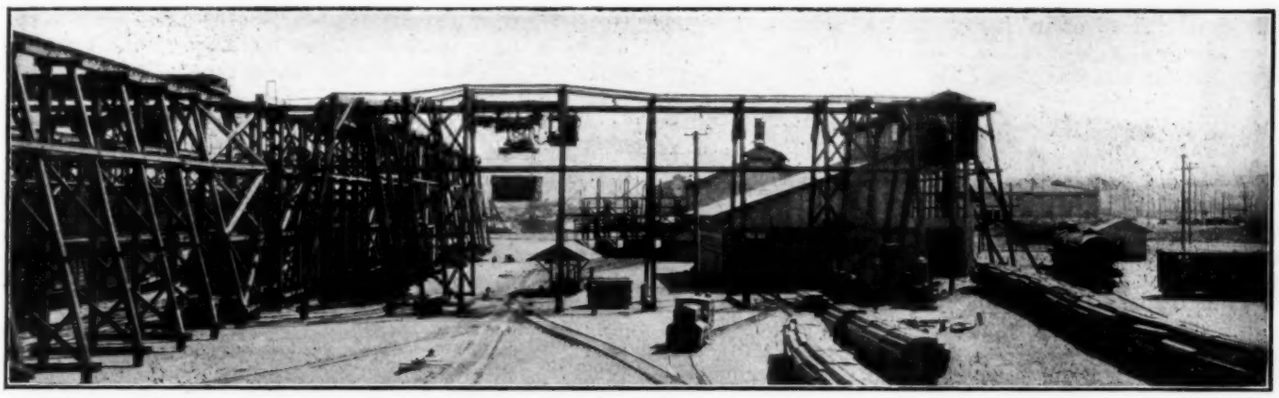
Carload Shipments of Fruits and Vegetables Shown by States. September, 1924, and season ended September 30, 1924, with comparisons for same periods, 1922 and 1923. Monthly Supplement to Crops and Markets (U. S. Dept. of Agriculture), November, 1924, p. 384-385.

Fair Value for Effective Rate Control, by John Bauer. Phases of railway regulation. American Economic Review, December, 1924, p. 658-672.

Function of the Motor Truck in Reducing Cost and Preventing Congestion of Freight in Railroad Terminals, by T. C. Powell. Annals of the Amer. Acad. of Pol. & Soc. Science, November, 1924, p. 87-89.

Linking up Railroad and Water Transportation, by Dorsey W. Hyde, Jr. By means of motor services. Annals of the Amer. Acad of Pol. & Soc. Science, Nov., 1924, p. 25-31.

One Way to Safeguard Grade Crossings. Cartoon by Albert Levering, suggesting erection of huge cross-word puzzles on either side of the tracks, with legend "Stop! Look! Solve!" New York Herald Tribune Magazine, December 7, 1924, p. 14.



A General View, Showing the Delivery of Ties to the Boring Mill

Overhead Cranes Serve New Creosoting Plant

Unusually Complete Mechanical Layout Provided for Southern Pacific Treating Facilities

A NUMBER of improvements designed to increase efficiency, safety and economy in operation have been embodied in the new timber treating plant of the Southern Pacific, recently completed at Wilmington, Cal. The mechanical handling system installed in the tie yard and boring mill is particularly complete and represents a recent development in the application of power equipment to the transporting of ties. It has been effective in minimizing hand labor and has cut the cost of handling the ties about one-half.

Ties are treated by the Rueping process, using a solution of 70 per cent creosote oil and 30 per cent heavy asphaltum base fuel or crude oil for the preservative, the process having been modified somewhat to make it applicable to Douglas fir timber.

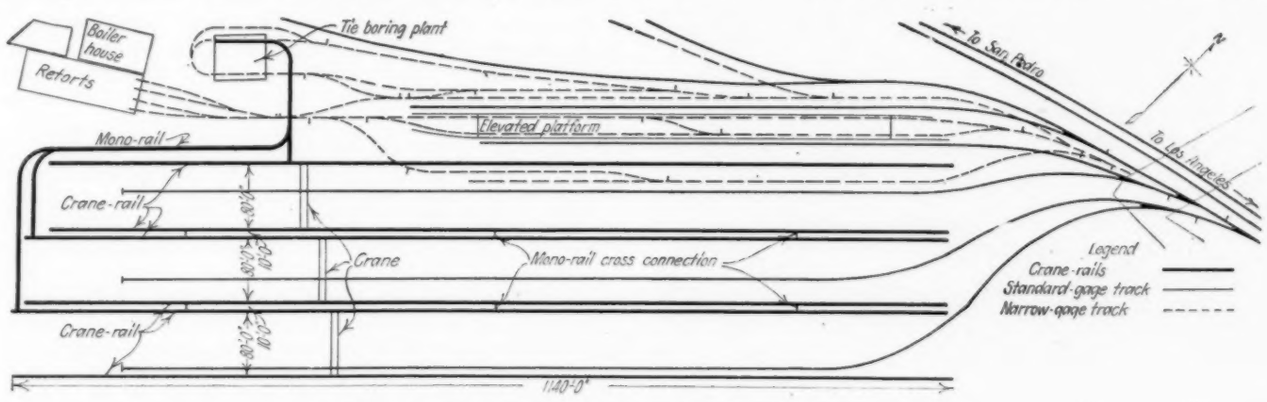
The increasing scarcity of labor for handling heavy material is one of the growing problems of all industry. In the handling of ties in and around treating plant storage yards, hand labor has been indispensable. The tie-handling methods adopted for the Wilmington plant have not entirely eliminated hand labor, but have reduced it to the making up of packages or bundles of ties and for the spreading out of these bundles of ties in the storage yard.

The cost of handling by machinery has been reduced to approximately one-quarter cent for each handling of a tie. The hand labor of sorting, making up into packages or arranging in the cars for shipment will come to about three-quarter cent, making the average total cost approximately of one cent. Under similar conditions other methods of doing the same work will average about two cents.

How the Ties Are Handled

To describe the full installation in logical order, the routing of the ties will be followed through the process of treatment, the facilities for each operation being taken up in detail.

The location of the plant close to tidewater permits the delivery of the ties to be made to an adjacent dock by water. Here they are loaded on cars, generally flats, in bundles of 56, 7-in. by 10-in. by 8-ft. main-line ties or 72, 7-in. by 8-in. by 8-ft. branch-line ties. The cars are switched into the storage yard of the treating plant.



Ground Plan of the Wilmington Plant and Storage Yard

The tie storage yard covers a space 260 ft. by 1,140 ft. and has a storage capacity for about 500,000 ties when properly piled for seasoning. The storage yard is served by three 80-ft. overhead motor-driven transfer bridges operating on crane runways 40 ft. above ground level. A standard-gage track for incoming cars runs the full length of each bay.

Mono-rail hoists of four-tons capacity operate on the transfer bridges, enabling them to cover the full area of

the yard. These hoists unload the tie bundles from the cars onto storage piles where hand labor is used to spread them out for air seasoning. The 7-in. by 10-in. ties are piled 28 tiers high and the 7-in. by 8-in. ties 36 tiers high, making the top of the seasoning piles about 24 ft. above the stringers which are of decay-resistant timber such as redwood or cedar.

Ties are left in the storage yard until the moisture content becomes constant. Under the climatic conditions obtaining at Wilmington, this takes from three to four months. When fully air seasoned the ties are again made up into packages, picked up by the mono-rail hoists and delivered to the tie boring mill. This operation includes picking up the packages by the hoist, carrying the hoist and package on the transfer bridge to the connecting end of the crane runways where the mono-rail hoist moves off onto an overhead mono-rail track that runs to the boring mill.

The transfer bridges have a speed of 500 ft. per min. and will cover the full length of the runways in 2¾ min. The mono-rail trolleys have a speed of 750 ft. per min. A round trip from the storage yard to the boring mill can be made in about seven minutes, including the time taken to hook on and release the load. This enables one mono-rail hoist to feed the boring mill to capacity, even when operating from the extreme limits of the yard with 7-in. by 10-in. ties.

The mono-rail track makes connections with the overhead

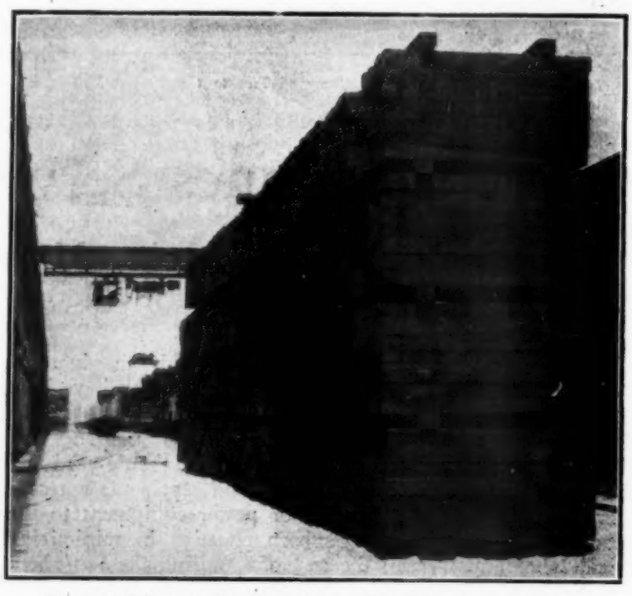
How the Cranes in Two Bays Line up to Permit the Mono-rail Trolley to Cross Between Them on a Transfer Bridge

transfer bridges at the plant end of the tie yard, but in order to develop the flexibility of this system fully, several other connections from bridge to bridge are provided, allowing the mono-rail trolleys to move readily from one bay to the other. The first bay, that is, the one nearest to the plant, is used also as a shipping bay for loading out treated ties. This will be described more fully later.

The straight mono-rail system is not uncommon in industrial plants throughout the country. Many of the larger lumber yards and mills have been equipped with this system and have added the transfer bridge scheme to enhance its value. But the application at Wilmington is the direct reverse of the above. The tie yard is fully covered by the transfer system and the mono-rail tracks merely add to the utility of these transfer bridges by allowing the hoists to deliver loads direct to the tie boring mill.

Plan Has Proved Effective and Economical

Since being put into operation this tie handling system has justified all expectations. Hand labor has been reduced to a minimum, thereby reducing costs appreciably. Further, the system is very attractive to the men working with it from the standpoint of safety. In handling ties to the storage piles or into cars the hoist operator is always directly over his load. He can see the entire operation and is not



Typical Piles of Tie "Packages" in the Storage Yard

dependent entirely on signals, as with most other methods of mechanical tie handling. As the bridges and hoists are motor driven, the fire hazard in the tie yard is also reduced.

At the boring mill the tie package is dropped on an automatic dumping rig by the mono-rail hoist. The dumping rig breaks up the tie package and two men then place the ties face down on the infeed conveyor which automatically feeds the boring machine. This machine bores eight holes simultaneously, the holes being located to insure the spiking of the rail to correct gage. After boring, the ties go to another machine where they are branded with the year of treatment, the type of preservative, the boring and a mark indicating the line end of the tie. The ties are then dropped onto live rolls that carry them to an automatic kick off, thence to gravity feed skids leading to an infeed conveyor for feeding the incising or perforating machine. In this the ties pass between power-driven rolls fitted with specially shaped teeth, staggered so as to puncture the ties at regular intervals.

This process is of great value in obtaining a uniform and complete lateral spread of the preservative to a uniform depth in Douglas fir timber, which is highly resistant to the penetration of preservatives. The machine bores and incises between seven and eight ties per minute, giving the mill a capacity in excess of 3,000 ties per eight-hour day. It will be noted that the ties are not adzed. Only sawed ties are treated and no difficulty is experienced from warping. Trim sawing for the purpose of detecting interior decay is also unnecessary under the conditions at Wilmington as there is no trouble from incipient decay and the ties are delivered under rigid specification and inspection.

An outfeed conveyor takes the perforated ties from the

machine and drops them on tram cars for transportation to the retorts. The tram cars are constructed to operate on a 29-in. gage track. They have a capacity of 32 7-in. by 10-in. ties or 41 7-in. by 8-in. ties, and are provided with roller bearings. They are handled by a gasoline-driven, narrow-gage locomotive.

The Creosoting Plant

The creosoting plant proper comprises four retorts 72 in. in diameter by 125 ft. long, with their necessary appurtenances. The retorts are arranged for one-end operation. At the operating end a high-speed mine-type hoist with

View of the Incising Machine, Showing the Infeed Conveyor and the Discharge End of the Mill

manganese road spools has been installed so that the retorts can be charged and unloaded by cable haulage. Steam heating coils are installed below the track in all retorts. An overhead horizontal operating tank, or Rueping cylinder, 7 ft. in diameter by 60 ft. long, is installed for use in the empty-cell process of treatment.

The retorts and Rueping tank are insulated to protect them against the loss of heat, this insulation being protected by sheet metal jackets. The retort domes are specially designed to minimize trouble from oil being carried over in the preliminary boiling process and, as a further precaution, barometric loops are installed in the vapor lines from each retort. The adjacent pump room contains the filling and pressure pumps as well as condensers, vacuum pumps, circulating pumps and air compressors. The retorts are separately piped to the pump room where oil and vapor manifolds allow full control of the process. A gage board, with recording thermometers and indicating pressure and vacuum gages, provides a proper check on operations. Treating records are kept on a blackboard for the convenience of the plant operator and are copied daily into a permanent record. Circulating water for the condensers is drawn from a pond and sprayed over this pond for cooling. The pond is also the source of boiler feed water. The boiler room is in the same building as the pump room and contains two 200-hp. internally fired boilers with separate steel stacks. Oil is burned as fuel.

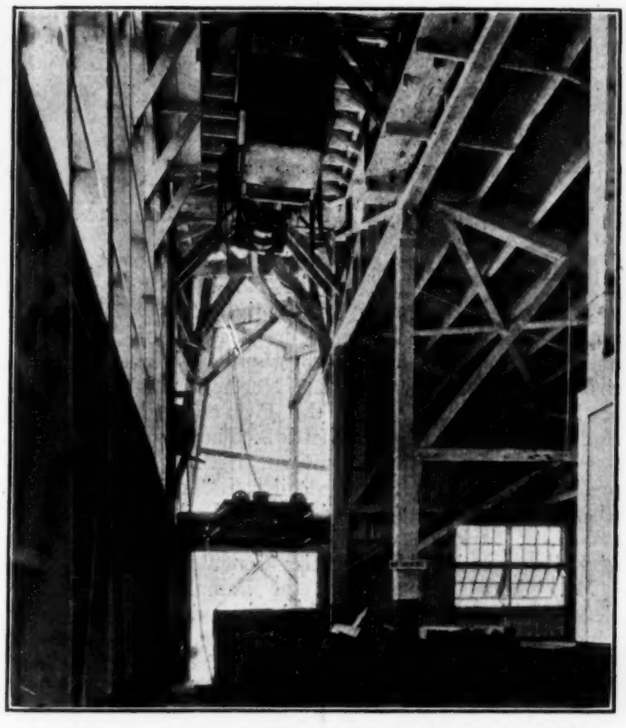
Treatment Modified to Meet Needs of Douglas Fir

The empty cell process of treatment is used, modified in accordance with experience, to meet the difficulties of thorough impregnation of Douglas fir. The first operation is to prepare the timber by a preliminary oil bath of sufficient duration to soften the wood fibers and make the timber less refractory for injection of the preservative. This is continued for a period of from 8 to 10 hours, at a temperature between 180 deg. and 190 deg. F. Automatic temperature control valves are fitted to the steam lines serving the heating coils in the retorts to insure uniform temperature.

If the timber has not been thoroughly air seasoned it is boiled under vacuum at a temperature of from 180 to 200 deg. F. For the first few hours a vacuum of not more than 15 in. of mercury is drawn, but after five or six hours this may be increased and maintained until the condensation from the timber accumulating in the hot well of the condenser does not exceed 0.1 lb. per cu. ft. of timber per hour.

At the completion of the bath, the oil is forced out of the retort into the overhead operating tank by compressed air and the timber subjected to air pressure, followed by the regular Rueping process for empty cell treatment. The timber is treated to retain seven pounds of the solution per cubic foot of wood. The whole process from the time the wood enters the retort until it is withdrawn occupies a period of approximately 15 hours with thoroughly seasoned timber.

The treated wood is loaded in the first bay of the tie yard where a narrow-gage track has been laid parallel to



The Mono-rail Hoist Delivery Ties in the Boring Mill

a standard-gage track. The trams holding the treated ties are switched to this track and the ties are loaded into open-top cars by one of the mono-rail hoists operating on the transfer bridge. This first bay of the storage yard is also used to store creosoted ties whenever shortage of equipment or other causes makes this necessary. As an emergency facility, an earth fill platform supporting narrow-gage tracks is provided for the transfer of ties by hand from the trams to the outgoing cars.

Auxiliary Facilities

Fire protection is insured by a complete system of fire mains throughout the yard with hose connections on the ground and rotary fire monitors mounted on the crane run-

way supports. A 500-gal. per min. fire pump is provided for ordinary use, but facilities are available so that the city fire department may connect with the system and augment the water supply with its pumping engines.

The oil storage includes a main creosote oil tank having a capacity of 1,250,000 gal. Creosote oil is delivered by tank steamer at a wharf located within 200 yd. of the plant. It is pumped by the tanker into the main storage tank. Adjacent to this tank are two smaller tanks; one of 150,000 gal. capacity for the storage of the solution of 70 per cent creosote and 30 per cent fuel oil, the other tank of 30,000 gal. capacity for the storage of fuel oil, which is delivered by tank car. As the plant is located close to some of the greatest oil fields in the world, there is little need for large storage capacity for this oil. The three storage tanks are set in an earthen basin of sufficient capacity to retain the oil if a tank connection should break.

The working tanks, two in number, are located close to the pump room and surrounded by a concrete retaining wall. The two tanks have a combined capacity of 50,000 gal. A fuel oil service tank of 1,500 gal. capacity is located underground to supply fuel to the boilers. Another underground tank of 600 gal. capacity is provided to supply gasoline to the narrow-gage locomotive. All tanks, except the two underground, are fitted with water-sealed roofs in accordance with a local law.

The treating plant was built under the general direction of W. H. Kirkbride, engineer maintenance of way of the Southern Pacific, Pacific system.

The Future of the American Railways

THE SEVENTIETH MEETING of the Economic Club of New York, held at the Hotel Astor on Monday evening, December 8, was given over entirely to the consideration of the future of the railways of this country and their relation to the government. Howard Elliott, chairman of the board of the Northern Pacific, and the newly elected president of the Economic Club, presided. Addresses were made by Alfred P. Thom, general counsel, Association of Railway Executives; William N. Doak, vice-president, Brotherhood of Railroad Trainmen; R. H. Aishton, president of the American Railway Association, and H. G. Taylor, past president of the National Association of Railway and Public Utilities Commissions.

Mr. Thom commented on the lessons from the recent election and also referred to the large savings to the shippers which had been made in recent years. In this connection he said: "The charge has been made that freight rates have not been and cannot be reduced under the Transportation Act. This charge is answered by the record, which shows that since the increase under ex parte 74 in 1920, to provide for increases in expenses made largely by governmental agencies, there has been up to September 1, 1924, savings to shippers due to reductions in freight rates aggregating more than $1,460,000,000, of which amount the saving on the products of agriculture aggregated more than $358,000,000. During the years 1923 and 1924, with production at its peak and with a volume of traffic theretofore unexampled, with weekly carloadings making new and astounding records, the railways moved to market everything that was offered, without car shortage and without congestion, at the same time by wise foresight and efficiency providing a reserve of nearly 100,000 cars and approximately 5,000 locomotives in good repair and immediately available for service. And yet the railway net operating income for 1923 under the Transportation Act was smaller by $78,000,000 than it was in 1916 before the Transportation Act was passed."

Mr. Doak spoke on the importance of co-operation between all of the interests in the great industry of transportation. "Undue interference by governmental bodies," he said, "either legislative or regulatory, will not produce a healthy transportation system. A broad, liberal policy of giving encouragement by sane helpful legislation, would insure the greatest measure of freedom in operation and development, and make for success. The public demands good service, employees are insistent upon having good wages and wholesome conditions of employment, management is concerned in producing successful operation and investors are solicitous of proper returns on investment. These constitute a group with mutuality of interest of such magnitude as to at once command proper legislation. Desirable legislation will not come through a selfish or exacting position. . . ."

Mr. Aishton, in commenting upon the splendid record which had been made by the railways in handling the peak loads, paid a high tribute to the Shippers' Advisory Boards. Concerning increased efficiency in operation, he said: "Part of this economy was due to lesser costs for materials and lower rates for labor. The great bulk of it, however, was due to improved methods of operation rendered possible by large capital expenditures for equipment and other improvements, plus the intelligent co-operation and working together of the federal and state regulatory bodies, shippers, employees and management, in tackling the problem not as a legislative one but as a purely economic proposition, as it is, in the good old American way, through exercise of individual initiative, enthusiasm and co-operation. One of the most outstanding indications of the practical value of real co-operation is the work accomplished by the Shippers' Regional Advisory Boards, ten of which have been established in various parts of the country. These boards work co-operatively with the individual railroads and with the Car Service Division of the American Railway Association. The function of these boards, which are composed entirely of shippers, is to form a common meeting ground between the shipper, local railroads, and the carriers as a whole, for a better understanding of their mutual problems."

Mr. Taylor also expressed great appreciation for the work of the Regional Shippers' Advisory Boards and argued for a lesser degree of regulation and for decentralization of regulation. He said in part: "If we are to persist in the present endeavor to regulate our railroads to the point of super-management then it would seem that some diffusion of the regulatory power must be accomplished if we would avoid a breakdown. I have a positive conviction that 265,000 miles of railway serving 112,000,000 people cannot be successfully managed or regulated from Washington. There should be eliminated from the law these provisions that interfere with essential managerial and executive functions. As an example, I refer to the power now possessed by the Interstate Commerce Commission to extend or withhold approval of extensions, new lines or abandonment of existing lines. The status of railroad development today is such that the free play of natural forces can be trusted to prevent unwise or improvident construction. Likewise, the section relating to consolidation should either be eliminated or so modified as to permit volunteer mergers. Compulsory consolidation is almost certain to be abortive, and at the least, cannot be otherwise than a disturbing element during the lengthy period it will be under consideration. With these features of over-regulation eliminated, further effort should be made to simplify the plan of regulation. Entirely aside from these matters involving conflict of jurisdiction, there is a wide field for action by state commissions. The enormous mass of detail now handled by the Interstate Commerce Commission should be shifted closer to the point of origin."

Real Facts About Railroad Consolidation*

Many Difficulties Must Be Overcome and a Long Time Will Be Required for Final Solution

By F. J. Lisman

THE RAPID UPWARD MOVEMENT in railroad securities since election day, is due to the expectation that railway companies will now be permitted to earn 5¾ per cent on the fair values of their properties without any further interference on part of Congress in the way of efforts to reduce rates and force down the valuation. As long as the status of the Supreme Court is not changed—that is, as long as our present Constitution stands, neither effort would have been successful, but anyway there is no danger for many years of any further attempts in that direction. Furthermore, much money now invested in tax exempt securities is expected to be transferred into railway issues as soon as the Mellon plan of reducing the maximum surtax to 25 per cent is legalized by Congress.

Railway valuation on part of the Interstate Commerce Commission has been progressing fairly well and if it were not for the interference of the new budget bureau, it could probably be completed in two years, but owing to the reduced appropriations the valuation work will drag. Possibly it will be 1928 or 1929 before we can get the report of the fair values of the railroad properties "as of July 1, 1914."

The profits to be made out of the consolidation of the railroads is what most buyers of stock are thinking of. These profits will be realized in many cases but the market is discounting now events which are still many years away. Consolidation of the railways of the United States into 20 systems, more or less, is coming sometime, possibly within 10 years; but the number of obstacles necessary to overcome in order to accomplish this aim can only be realized by those who are grappling with the situation.

The Intent of Congress

It was the intention of the framers of the present Esch-Cummins bill when the transportation Act of 1920 was passed, to enable every community in the United States to have as nearly equal railroad facilities as possible, commensurate with the volume of business; in other words, Mr. Jones living in Squedunk, a town of say 1,000 people on the Squedunk & Backwoods Railway, should receive as good service as Mr. Brown, located in a town of 1,000 population on the Pennsylvania or the Chicago, Burlington & Quincy Systems. This is a high ideal and we have actually made some little headway in that direction. Physically, we may have gone possibly 2 per cent of the way since 1920, but as many minds are concentrated on this object, we have mentally progressed maybe one-quarter in the desired direction. Recent consolidations have embraced approximately 2 per cent of our railway mileage, while we have during the same period visualized and solved mentally many of the phases which will have to be worked out physically and legally in the next few years.

The Mandatory Provision

The writer has had repeated talks with the authors of the Act of 1920, who admit that while they themselves at the time of the framing of the act were clear as to what they wanted to accomplish, they were not quite clear as to how it could be done. The act contains a mandatory provision requiring the Interstate Commerce Commission to formulate a complete plan of consolidation of all railways within the United States into approximately 20 systems which should be of approximately equal financial strength and capacity to serve the public efficiently and economically. The law was drawn in such a manner as to appear that the Commission has not the right to permit consolidation of the railways except as a whole—that is, all railroads are supposed to be formulated simultaneously into 20 systems, the same as thousands of men might be ordered to line themselves up in 20 regiments. Even if there were no complex problems involved, financial, legal and human, the matter could not be disposed of in that way. Fortunately the act contains another provision which, subject to the approval of the Interstate Commerce Commission, permits railway companies to acquire control by lease or stock ownership of other companies, and several so-called consolidations have recently taken place under this provision.

At first, the Interstate Commerce Commission was averse to permitting anything tending towards consolidation, pending the accomplishment of what might be called "the assembling of the regiments" but finally the Nickel Plate consolidation of 1923 was permitted by a bare majority vote. Since then we have seen the acquisition of the Clinchfield road by the Atlantic Coast Line interests; that of the International & Great Northern by the Gulf Coast lines, etc. In each case the Commission reserved the right to undo these leases or acquisitions of control, in case some other disposition of the properties in question should be deemed advisable when the final consolidation plan is formulated. It may, however, be taken for granted that this is merely a technical, legal reservation and that these consolidations, with possibly some very minor exceptions, are certain to be permanent.

Compulsory Consolidation

In ordering the formulation of a consolidation plan, Congress has certainly given the Interstate Commerce Commission a very complex task. Some 30,000 pages of testimony has been taken on this subject all over the country. The Commission realizes that no matter what the map may show, the officials of the 180 odd Class One roads, which means railways earning over one million dollars annually, as well as the owners of the 700 short lines, must necessarily know more about the possible destiny of each particular property than can be brought out by any official examiner at a public or private hearing. Several of the commissioners would like to see Congress repeal the section of the Transportation Act which contains this mandatory provision for a general plan, not only because they realize the difficulty of the job but also because the demand that a certain road should be consolidated with a certain other line, would hamper rather than facilitate consolidation; a transaction between unwilling buyers and sellers cannot be accelerated by instructions to "get together." Furthermore, in formulating such a plan, many local interests are bound to be antagonistic. A fair example of this is the objection of the city of Philadelphia to having the Reading allotted to any of the large systems. The Reading is an important railroad which gridirons eastern Pennsylvania and concentrates its traffic in Philadelphia. Its inclusion in a system which also reaches New York and Baltimore might give the merchants of these cities a better chance to compete and therefore somewhat injure some Phila-

* From Lismans, November 19, 1924.

delphia interests. There are many other similar cases.

If an effort is made by the Commission to get an amendment to the present Transportation Act through the rather radical Congress which expires on the fourth of March next, many other requests for changes will be made on behalf of many interests; therefore, nothing is likely to be done in this direction during the forthcoming short session. Possibly the President will call the new Congress in special session in order to force through the Mellon tax plan, for which an emphatic mandate has been given by the voters. If this should be the case, President Coolidge would undoubtedly make some strong recommendations for the purpose of amending the Transportation Act in order to expedite consolidation.

The Weak with the Strong

In the meanwhile, the greater Nickel Plate consolidation is going to come up definitely before the Commission for approval. This scheme furnishes financial strength for a conspicuously weak line—the Erie, and on the whole we believe that the Commission will be inclined to consent to this transaction, reserving to itself the customary right to unscramble. We believe, however, that before the necessary permission is granted Messrs. Van Sweringen and their associates will have to agree to acquire a number of the short lines connecting with their proposed system.

The Commission strongly believes that the purpose of consolidation is to have the strong lines take care of the weak ones, and unless all the weak lines tributary to the strong roads about to be consolidated are included, the intent of Congress to provide substantially equal facilities for all the people, is not being carried out.

Probably a large number of short lines will request that they be included on fair terms in the pending greater Nickel Plate consolidation. This will raise a great many complex questions. In some cases the trunk lines will assert, with much justification, that the whole of some short lines and parts of others have no reason for existence and should be dismantled. In many cases the question of a fair value of these short lines to the public they serve or to the trunk line with which they connect, is difficult to ascertain and it is still more difficult to determine the price the trunk lines should pay. If the parties themselves cannot agree, the matter may have to be left to the Commission.

Powers of Commission

The Commission has no legal authority to fix a price although it has a right, in fact a duty, to approve terms which the parties may agree upon between themselves. The law, however, gives the Commission the right to fix divisions —that is, to give a short line a larger division of earnings on freight business interchanged with a main line than its pro rata proportion of the mileage would entitle it to. The power to fix these divisions is in effect equivalent to the power to fix the value. The Commission has been very loath to use this power, which was made part of the law for the distinct purpose of protecting the weak lines. The Commission will soon be compelled by the force of circumstances to use this power extensively in order to accomplish the intent of Congress. It is this provision of the law which has kept the New England roads out of bankruptcy.

Lawyers agree, as near as they ever agree on anything, that as the property of a railroad company is already devoted to public service, it cannot be condemned a second time for that same purpose—that is, the Nickel Plate for example, or the Erie, could not condemn the property of the Pittsburgh, Shawmut & Northern which it might be required to acquire; nor could the New York Central condemn the property of the Buffalo, Rochester & Pittsburgh, which it would like very much to acquire.

The best way, therefore, to bring about consolidation, is for the large companies to get together with a view of agreeing as to the division of the lines tributary to them and to submit all differences to some independent arbitrator. Thus far there have been meetings of the presidents of four large systems in the Northeast, generally called the "trunk line territory."

Trunk Line Plans

The trunk line presidents have submitted to tentative plan "informally" to the Commission. This is merely a gesture or a trial balloon, probably intended to draw out opposition. Thus far the only opposition developed has been that of one of the big systems—the Pennsylvania Railroad. No doubt when the public at large is made cognizant of the plan there will be more "kicking." This plan for example attempts to allot three of the lines running between Chicago and St. Louis to the eastern trunk lines, while it leaves the fourth line in western traffic territory, where the other three lines are now domiciled.

The plan with a liberal hand, disposes of the Chicago & Grand Trunk which is a 300-mile double track road out of Chicago across the State of Michigan belonging to the Canadian government railway system which could not dispose of it without a sanctioning act of the Canadian parliament. This informal plan, also quite informally cuts the Wabash and the Alton Systems in two. It does away with the competition in Baltimore between the Baltimore & Ohio and Western Maryland, subject to the consent of the state of Maryland, which is probably unobtainable, and it generally and cheerfully disposes of many properties belonging to other people.

In several cases where there might be competition for control of important minor properties, this control is allotted jointly to two or three of the possible contestants.

It is necessary, however, to start somewhere and this informal plan will no doubt serve this purpose. The difficulty is that the Commission can only approve what the officials or stockholders of the companies agree to and in many, if not most, cases these gentlemen can only be made to agree if threatened with or actually hit with some particular kind of a club which has not yet even been designed in form of a blue print.

No Quick Decision On Nickel Plate Plan

If the Commission were a court, it could refuse the request of the short lines to become parties to the Greater Nickel Plate consolidation hearing, on the theory that a merger in the strict sense of the law is not then being contemplated.

In our opinion the Commission is an instrumentality for the purpose of carrying out the intent of Congress and it will therefore have to take a broad view and ask itself this question: "If we now permit these companies to take over the control of railways which they are keen to acquire, can we subsequently compel them to take over the less desirable connecting lines?" We believe the Commission must necessarily arrive at the conclusion that the proposed Nickel Plate leases or acquisitions constitute in effect a consolidation and must be very comprehensive.

All this would mean, that the Nickel Plate consolidation hearings must cover much new ground, develop new precedents and drag over a very long period. We doubt whether a final decision may reasonably be expected within a year.

If an agreement can be arrived at, as to which minor lines are to be taken over by the stronger companies, it would be desirable to have some arbitrator work out the value of the various lines, but again it is doubtful whether different sets of people who are human, and therefore selfish, would permit a third party to determine at what price they shall buy or sell a given property. The law apparently cannot provide directly for compulsory purchase or sale. Human selfishness, in most cases, probably will prevent the determination

of a price by a third party, therefore, human ingenuity must contrive some new method to make all this possible. Whatever this new method may be, it will have to pass the gauntlet of the courts. In the meanwhile no doubt voluntary consolidation will be accelerated, more or less, by voluntary acquisitions similar to the proposed Nickel Plate merger, and many of the problems, the solution of which may seem extremely hazy, will be cleared by the presentation of a variety of definite cases, which will bring about a meeting of the minds on separate phases of many of these companies.

In anticipation of early consolidations, many railroad companies will declare dividends, thereby expecting to receive more favorable consideration. A fair example of this type is the Wabash and the St. Louis-San Francisco.

Our Present Status

We are living in an age when the public must be served in the best manner possible. The physical value of our railway systems as of June 30, 1914, plus the sums spent since that date for extensions and improvements, will probably approximate twenty-two billions; the cost of duplication at 1924 prices is probably around thirty billions; the total market price of securities representing this enormous investment is today somewhere near sixteen billions, or not over sixty per cent of their fair present intrinsic value which the nation would have to pay if it attempted to bring about public ownership. No one can therefore justly assert that the present bull movement in railway securities has no justification. A bull market sooner or later over-discounts the immediate future. In a country with the great resources in the soil and in the high standard of living which we possess, it is hardly possible to overdiscount the future very far ahead.

A look backwards at our previous bull markets proves the correctness of this assertion. It is well though to remember the old adage that "Nothing is ever as good or as bad as it seems."

Private ownership and development of our railways or what malcontents and theorists call with a sneer "the capitalistic system" has given everyone in our country who has a modicum of energy and intelligence an opportunity to obtain all the good physical things of life, and as many of the higher things, as he or she may crave. The best proof of the success of our railway management is that our railway system is now hauling on an average every day in the year nine tons of freight for each and every man, woman and child in the country, at a daily cost to each of a shade under ten cents, while the daily cost of taxes for every man, woman and child in the United States is annually slightly over twenty-five cents or a total tax burden of ten billions.

Railroad Problem Economic Rather Than Political

THE RAILROAD PROBLEM is an economic rather than a political one, and must be solved on scientific principles as such. This was the keynote of an address by William H. Finley, president of the Chicago & North Western, before the Chicago Association of Commerce on November 26. The necessary improvements demanded by the country's growth can be made only if the railways are permitted to make enough to enable them to carry out the expansion, he said. Mr. Finley spoke in part as follows:

"We have just emerged from a stormy political campaign during which the railroads and the railroad problem were near the storm center. Emerging therefrom we find radicalism severely rebuked. We may now face the problem without passion or prejudice.

"The first and paramount aim of the railways is to give adequate and efficient service, trusting in the fairness of the American public. They are equipped to handle the nation's traffic better than ever before and have just passed through the peak of this year's business with no perceptible car shortage and with an apparently satisfied public. I believe there is no doubt about the revival of business if we now face our problems without prejudice and try to salve our difficulties in accordance with economic laws.

"We are all concerned with the reasonableness of freight rates. The test of their reasonableness is the freedom with which the commerce of the country moves. The great freedom with which commerce is now moving may be construed as indicating that the rate structure is reasonable. During the week of October 25 there were loaded in the United States 1,112,345 cars of freight, the greatest week's traffic ever recorded. This fact is evidence that freight rates are not unreasonable and are not impeding the flow of traffic.

"The value of the commerce transported annually in this country approximates 100 billion dollars. The freight charges in 1923 were less than 5 billion dollars or less than 5 per cent of the value of the commodities transported. A 10 per cent advance in freight rates would require but one-half cent additional freight charge for each dollar's worth of goods transported, which would hardly be perceptible, inasmuch as the railway service contributes far more to the development of commerce than the measure of compensation would indicate.

"Prosperity is a balanced condition in industry. Prices in general are rising, and the fact that they are not being accompanied by a corresponding rise in railway charges, which are fixed by regulation, puts the railway industry out of balance for the time being, or until an adjustment can be accomplished. The processes for such adjustments are decidedly slow.

"Our railway regulation, purporting to be on a cost of service basis, has really worked out to be not a cost, or a cost plus, but a cost minus basis. The future of successful regulation, if that is ever accomplished, lies in our treating the subject on the basis of the economic value of transportation and eliminating political influences so far as possible.

"Europe has passed through a six year struggle in an effort to adjust economic difficulties through political activities and has failed, and we are now looking to Europe's recovery on a plan based upon sound economic theory. This teaches us that economic problems can only be solved by the application of appropriate measures based on scientific principles.

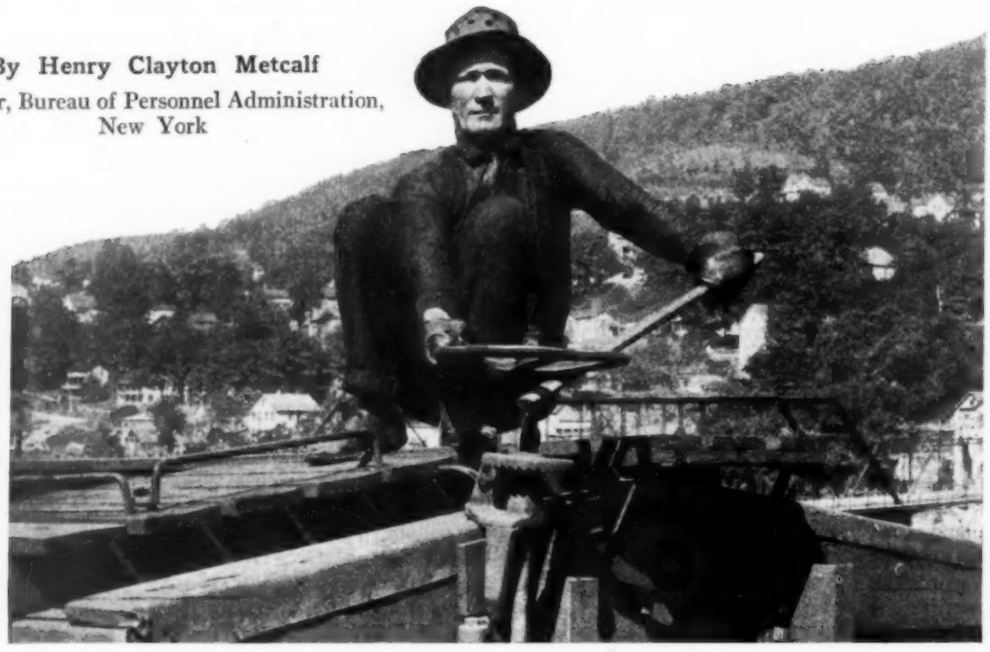
"The people of this country must be impressed with the fact that if the railroads are to keep their plants up to the highest state of efficiency, they must have more income than is necessary to pay a fair dividend to their stockholders and bare living expenses. We must have sufficient funds to allow us to put back a portion into the property and at least partially pay for non-revenue producing improvements that people are constantly demanding from the railroads and are entitled to.

"If the railroads participate in the general prosperity and are permitted the same latitude, I believe that in a comparatively short space of time they can reduce their freight rates accordingly. The railroads cannot continue to pile up their bonded indebtness without reaching a time when their interest charges will be so great that they will not have anything left for dividends, and when that time comes—if it does—the railroads will be completely crystallized. The hope of the railways for the future lies not in charity toward them, but justice to them; not legislative favors, but fair treatment by the people and their representatives."

In concluding his remarks, Mr. Finley called attention to the probability of the railroads celebrating their centennial in a few years. He implied that this will be an interesting and practical means of helping in the important work of getting the railroads back to the people.

Employee Representation on the Railroads

By Henry Clayton Metcalf
Director, Bureau of Personnel Administration, New York



Photograph by Ewing Galloway, N. Y.

[*Dr. Metcalf was one of the judges in the* RAILWAY AGE *competition for the best articles on co-operation between employers and employees in the interests of efficiency. This is the third of a series of articles suggested by a critical study of the 372 essays entered in the competition.*—EDITOR.]

"TO ME there is no question but that to a large extent the lack of railway earnings is due in a large measure to lack of adequate facilities that will come up to modern standards of industrial practice.

"Closely related to these modern facilities however is the matter of the man power that is to operate them. If the highest efficiency is to be obtained there must be co-operation.

"The study and practice of efficiency therefore involves the matter of human relations and it is from this angle that I have come to my conclusions that more attention should be paid to the study of men and less perhaps to the machine.

"We have in other words seemingly carried matters of mechanical efficiency past the point of man efficiency and further advances in simply the mechanical side of the industry will not be reflected in greater net earnings unless we carry the man right along on an equally advanced basis.

"Thus aside from any purely humanitarian motive, which is the highest of course, we can put it on a plain financial basis.

"From an intimate contact with men of all classes and ranks in the railway field and over a period of 15 years, I know that today there is a great gap between the management and the men. This gap is not to be bridged by any flimsy statement on the part of the officers that they are interested in their employees. It has got to be a real honest and on the square proposition.

"There may be here and there a man in official rank who has caught the vision of the new day in dealing with the rank and file of the organization, but as a whole there is very little exhibited that would indicate that such an interest was being taken."

This is quoted from a letter, dated December 2, 1924, to the writer from a man of long experience on one of the leading railways. It is a significant statement. Many such have reached the writer during the recent past. The growing conviction is a common one that the machine reigns, that man is caught in a mechanism, that science in material relations has far outrun man's knowledge of himself and his human relations. This feeling ran through a large percentage of the essays submitted to the *Railway Age* contest for the "Best Methods for Bringing About Co-operation Between Railways and their Employees to Promote Efficiency." This is why we have selected the employee representation movement as the subject of our third article.

The Redistribution of Economic Power

One of the most striking features of our times, which many complex forces are bringing to the attention of serious minds, is this—economic power with a cumulative momentum is passing from the few to the many; the importance of the laboring masses increases. Many significant consequences flow from this redistribution of power. Among these, for our purpose, the following only are noted:

(1) The urgent need for the spread of consciously directed economic intelligence. This is one of the wholesome effects of the employee representation movement. It helps bring the essential facts bearing upon a given situation before those whose lives are most directly affected by them. It forces a more conscious attitude toward the daily work experience.

(2) The democratic law stated above, if it is to be directed into wholesome channels, demands a developing appreciation of the significance of the diffusion of property. This appreciation was clearly apparent in the minds of many of the contestants in the *Railway Age* competition. The evolution of what has been called "the labor-capitalist class" is a most significant and wholesome tendency in our economic and social development. Professor Carver, of Harvard University, believes that we are approaching an equality of prosperity more rapidly than is realized and that, "unless we embark on some unsound policy, the present tendency will

carry us further than most of us dream. The processes are now at work under capitalism, under freedom, under voluntary agreement among free citizens, which will put such great power in the hands of our manual and clerical workers, that it will enable every occupation to prosper." It was clearly in the minds of many of those who participated in the *Railway Age* prize competition that ownership is a logical corollary of a genuine co-operation.

(3) This redistribution of power is a positive danger unless we grow in the *capacity* for and *practice* the *habits* of constructive co-operation. This is the third and vital consequence of the law stated above.

The speed of intelligence, the diffusion of property, the growth in the habits of constructive co-operation are the striking characteristics of the democratic law of our times. We are here briefly concerned chiefly with the third—a prudent attempt to set forth some of the significant phases of employer-employee co-operation as it is spreading through industry.

Forces Shaping Employee Representation

The employer - employee movement is a fine example of conflict as a creative force. This movement is among the most significant experiments in our whole economic and social life. Many incidents during and since the war have helped accelerate collective arrangements between employers and their workers. Among the forces which have given a vital impetus to new methods of joint action in the employer-employee relations may be mentioned the determination of shop policy during the war; the importance of getting the "consent" of the workers in uninterrupted production; open channels of communication as a precaution against strikes and a preventive of high labor turnover; the influence of governmental operation of industry; joint action as a solvent of ill-will and destructive friction. Among the transforming subtler influences were the growth of scientific knowledge; standard methods of measuring and controlling human behavior; a more rounded view of life and its organic meaning; a newly emerging business philosophy based upon a wholesome understanding of the aim and significance of a unified democratic life.

We shall not here, however, enter into the motives which have led employers to put shop committees into operation. Nor can we stop to discuss the different types of these organizations; the general principles underlying them; their relative merits; their methods or the technique of operation. Much easily available literature deals with these phases of the shop committee movement.*

*See "Personnel Administration: Its Principles and Practice." by O. Tead and H. C. Metcalf; McGraw Hill Co., N. Y., 1920; ch. XXVIII (Principles of Shop Committee Organization) and ch. XXIX (Methods of Shop Committee Organization).

Objectives of Employee Representation Movement

The employee representation movement is emerging from its experimental stage. It is now devoting its attention to constructive accomplishments. Many of the earlier plans, brought forth by the compulsion of the war period, have passed away. Many others born of ulterior and insincere motives have likewise ceased to be. In major portion, the plans surviving the rapid post-war development and the subsequent period of industrial depression, together with those of most recent adoption, are based in the main upon a more constructive analysis and procedure, upon wholesome objectives, upon a clearer conception of the meaning of conflict. Both employers and workers are becoming more conscious of the inner meaning of the movement. They often conscientiously and loyally subscribe to the goal they have mutually determined. Briefly the objectives of the movement may be stated as follows:

(1) To provide organization and procedure for collective negotiation regarding hours, wages, working conditions and other terms of the employment contract, particularly affecting the welfare of the workers.

(2) To facilitate organization and procedure for the prompt adjustment of individual and group complaints and grievances—giving special heed to the word "prompt."

(3) To facilitate preparation of subordinates for positions of responsibility by familiarizing them with the needs and demands of the larger managerial problems.

(4) To provide a "double track" channel of communication through which management may learn more about employees' desires and needs, and may inform them of its plans and purposes in so far as they are likely to affect the mutual interests of workers and management.

(5) To aid employees to appreciate the difficulties of the managerial function, not only regarding matters of hours, wages, etc., but also policies affecting finance, production, sales and the administration of public relations.

(6) To afford employers, workers and the public an opportunity to find out what they think about their thinking on one of life's most fundamental problems—the human relations in industry.

Emancipation Through Scientific Methods

The earlier distrust of management's ulterior and secretive motives in creating works councils and fear of employees' radical tendencies are giving way to a wholesome, constructive, mutual confidence and respect. The movement is actually working out a wholesome emancipation—emancipation from many of the earlier doubts, suspicions, misgivings, etc., on the part of both employers and workers. This emancipation is in large part due to the fact that the move-

SIGNIFICANT QUESTIONS

1. **What are the most significant tests for measuring the success of a plan of employee representation?**
2. **Is a managerial or employer's veto over decisions of joint councils advisable?**
3. **What should be the functions of a personnel officer with respect to employee representation?**
4. **Is there need to supplement employee representation by some form of extra financial incentive, e. g., profit sharing, stock ownership, "economy dividend," etc.?**
5. **Should the basis of employee representation be the entire system of a road, or the separate branches of the service such as the train service, maintenance of equipment service, shops, offices, etc.?**
6. **Can trade unions, with their present full-time officials, be incorporated in the employee representation plans, and would such inclusion be desirable?**
7. **If employee representation becomes well established, what functions remain for the Railroad Labor Board?**
8. **Does the growth of employee representation indicate a need for any special treatment of industrial government in public school courses, in technical schools, or in colleges?**

ment has allied itself with the scientific method, as well illustrated in the cases of the Pennsylvania Railroad, the Baltimore & Ohio, the Delaware & Hudson experiments, and in a growing number of industrial corporations. This is a most wholesome tendency. Science is a great solvent of prejudice and misunderstanding. Many works councils have broadened from the narrower consideration of problems of wages, hours, working conditions and grievance adjustments to the constructive participation by the workers in the formulation of administrative policies and the solution of managerial problems. The movement is being understood more and more as a *growth*. Hence emphasis is being placed upon methods and means, not ends. Questions of constitutional form occupy less time and energy, and method and technique of smooth, effective operation are emphasized.

A list of the corporations operating under some form of employer-employee co-operation would be imposing in length and impressive in membership, including many of America's foremost industrial companies. Likewise, an inventory of the subjects which are jointly observed, analyzed, evaluated, and settled by responsible executives with committees of their employees, shows with what seriousness management and workers regard their joint arrangements.

Many Unsolved Problems

Despite the wholesome evidence that progressive managements are convinced that works councils are a constructive aid to sound industrial relations, there remain many questions of policy respecting the wise use of the representation machinery before mutually satisfactory results are established. Many problems of a general nature are to be solved which only time and wide experience can settle. The solution of many other problems will depend upon local situations.

There is need for fuller appreciation of what the movement is all about; what it may wisely be expected to attain. There is as yet no clearly defined body of principles to guide it, no clearly determined *direction* for growth. This, however, does not mean *fixing a goal*. The only safe goal is honest *experimentation* and growth. Definite *commitments* in this democratic dynamic experimentation are positively dangerous. Grave mistakes have been made in this particular. On the other hand, the movement has too often been jeopardized by the habit of unthinking imitation. It is dangerous in these times for management to move without a clearly defined, freely assented to dynamic creed, a creed representing clear conviction, sound ideals, workable principles, a tested technique. To regard the employee representation movement as essentially an antidote for unionism not only arouses futile destructive opposition, but destroys the opportunity to make of it a constructive instrument furthering the ends of production and social service.

Relation Between Employee Representation and Trade Unions

An ultimate integration between a new type of unionism and employee representation, though not yet clearly discernible, it not impossible. One of America's leading business executives recently expressed the conviction that a constructive liaison between these two collective movements was one of urgent insistence. In some industries already, for example, some of the railways, the garment industry, and others, certain forms of shop representation and unionism are working side by side. Instead of being mutually hostile, the two aspects of the resulting industrial government have proven reciprocally helpful. The results have promoted industrial efficiency. Certain of the unions of railway workers have joined with the management of the Pennsylvania System to make effective employee representation on that railroad. Union members have been elected to works councils in many plants. Many important questions arise here. What is the attitude of the average union man on the firing line of employee representation toward it? Is he furthering its constructive possibilities or is he opposing it? The attitude of national union officials, whose contact with the employee representation movement has been remote, is often one of direct opposition. What is the attitude of the local union officials who *live* with the movement? Has the employee representation movement modified the policies or the objectives of unions? Particularly, has it aided them in appreciating the scientific method in shop practice? Has it in particular instances tended to weaken the hold of unions upon their members?

These and many other questions of similar nature must be answered on the bases of accurate observation and evaluation before wise formulation and dissemination of managerial policies, principles and objectives respecting employee representation will be constructively possible.

Many able employers sincerely believe that employee representation affords workers a means more favorable than trade unions for joint negotiation to determine hours, wages, working conditions and the settlement of differences arising from the terms of employment. The continuous, full access to all the facts in a given situation; the constant, frequent, friendly contacts between management and employees; more intimate acquaintance with the management's habits of thought, actions, desires, etc., are advantages which may offset the lesser business experience, freedom of action, and broad industrial viewpoint of council members as compared with union business agents. It is by no means impossible that these and other advantages of the employee representation movement may invalidate the claim of some professional labor leaders, that workers unaffiliated with employees in plants of other employers are powerless to gain substantial or permanent advantages from employers. Employee representation involves an employer in a kind of commitment from which it is difficult to recede. The employer agrees to set up these representation plans in order to obtain definite accurate knowledge of employees' desires, just needs, fair settlement of disputes, etc. This knowledge he counts a gain. Having embarked on this course, the employer must either satisfy workers' demands or furnish adequate reasons for not doing so. To abandon the plan is to destroy confidence in managerial integrity and wisdom, and to make more difficult future practice in dealing with workers.

Essentials of Employee Representation

We have as yet scarcely sensed the *possibilities* of the right kind of government in industry. These employee representation schemes as a medium for joint negotiation have real merit, but these are minor matters compared with the potentialities inherent in such plans for the genuine participation of workers in management. The first great essential is absolute confidence in the sincerity and righteousness of management's objectives, in the proven determination of management to do its part in making the plan a reality. Not until complete assurance has been given that agreed upon matters subject to joint negotiation and agreement will receive prompt, satisfactory settlement can management hope to have employees constructively interested in managerial problems. Workers must be convinced that private gain, while entirely legitimate, is not the only purpose of industry. "Service to the Consumer" must be more than a mere slogan. The enterprise must prove itself *pro* social. It must operate under organically sound human relations. Otherwise, appeals to loyalty, pride in workmanship, lower costs, quantity and quality improvement will go unheeded. But where confidence rests upon a secure basis; where employee representation gradually ceases to be merely a procedure to facilitate agreement over minor matters between workers and employers; where man's supreme agent, *science*, enters as the binding link between employers and workers; where the movement becomes a means of truly developing a *capacity* for co-operation; where it trains *all* groups in an industry in the *habits* of managing a *common* enterprise, it holds out the greatest possibilities.

Reliance upon power, force, secrecy, hero worship, will not bring the mutual confidence upon which the employee representation movement must be built. The gradual abandonment of the autocratic method is essential. *Sensitiveness* on the part of those in authority is of the essence of democracy. "Industry must find its own way through the difficulties with which it is beset, or face the alternative of state intrusion which must invariably lead to bureaucracy and breakdown"—"Industrial democracy will eventually prevail despite all dictatorship, whether dictatorship of the proletariat or dictatorship of capitalism."*

Dictatorship is out of place in joint conferences. These must have access to all available facts which may accurately throw light upon problems under consideration. Representatives' constituencies must be kept informed *fully* as to the action taken by their members and by the councils. Management must grant workers opportunity to deliberate among themselves; encourage constructive criticism and be prepared to meet opposition with facts and convincing reasons. The methods, technique, devices, designed to satisfy the needs will vary according to different situations. The essential thing is to get at the truth and to reach decisions as promptly as justice warrants. Nothing is more fatal to the success of the employee representation movement than the conviction on the part of workers that essential facts are lacking.

Employer-Employee Relationships One of Harmony and Accord

A critical evaluation of the employee representation movement is bringing to light the fundamentals of the human relations in industry. While clearly one of the obvious purposes of these joint policies is to provide machinery for the prompt and joint settlement of grievances, it is significant that there is a conscious, growing conviction that the proper and true relationships between management and workers is not one of continual strife. In the words of General Atterbury of the Pennsylvania System: "The underlying foundation is that the mutual relationship is one of harmony and accord and is conceived and carried out on the three-fold basis of mutual faith, facts jointly established, and fair play."

De Tocqueville, the master-mind of democracy, long since declared that "Whatever exertions may be made, no true power can be founded among men which does not depend upon the free union of their inclinations." What does this mean for business managers and their employees? Are we not justified in deducing from it the logical conclusion that if we are to have true efficiency and harmony in the work relations, managers and workers, or their representatives, must exercise not superior force, but a *right;* that authority must rest upon proven worth and wisdom; that obedience will be increasingly rendered, not to *a man,* but to improved industrial law and to justice?

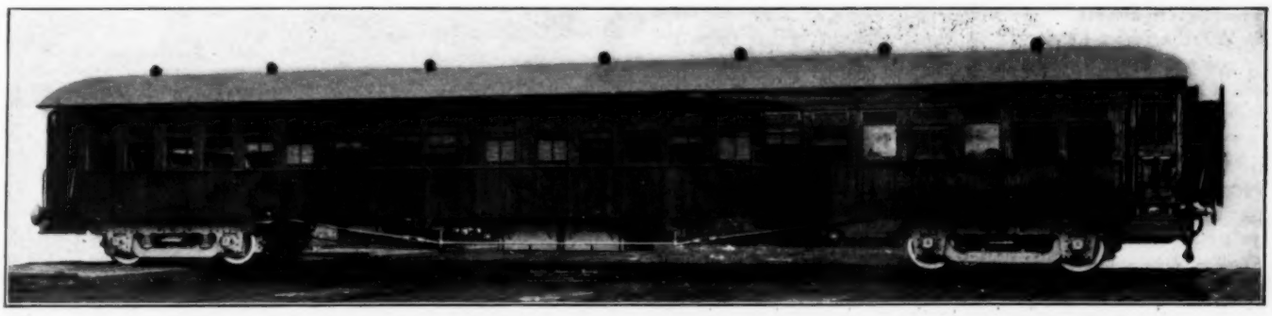
* Report of the Executive Council of the American Federation of Labor at its recent annual convention.

Further, if true power depends upon "the free union of the inclinations" of those producing it, does it not follow that this power must be exercised at the point where the conditions calling it forth arise? Does De Tocqueville not furnish employers and workers a clue to the helpful solution of some of their most baffling problems? Will not these problems be most constructively observed, analyzed, interpreted, evaluated, and most safely directed at the points where they arise and by those whom they most directly affect? Are we not coming to recognize that the idea of *voluntary agreement* among those most interested in decisions at the pivotal point where issues arise is of the essence of the employee representation movement? Is this not the way to open up channels for the free flow of facts, knowledge, hopes, aspirations, wisdom, (which cometh from discussion)? Would such a "free union of their inclinations" not tend to awaken and foster at the centers where energy should be developed a keener sense of personal responsibility in workers? Industry needs a more conscious, deliberate, responsible, organized attitude on the part of *all* its participants toward their daily work experiences.

The whole concept of conflict needs thorough revision. In our industrial life a deep-seated persistent feeling is very generally voiced, that there prevails inevitable conflict—conflict between employer and employee, between producer, middleman, and consumer; between banker and manufacturer; between merchant and merchant; between worker and worker. Here we need new incentives, new solvent concepts, real industrial statesmanship to lead us into the light of a new industrial day.

In our recent article we stated that the greatest asset any business can have is the enthusiastic interest of all its workers in developing and applying the greatest quantity of physical, intellectual and spiritual *energy.* The famous scientist, Galton, declares the word energy, if understood aright, to be the richest word in the English language. *Energos* means *at work.* Energy is the source of *creative life.* What kind of conflict is life-giving? Too much conflict is destructive. What do we mean by saying that conflict is life-giving, is actually creative? We mean that conflict offers a challenge. It is an opportunity for creative thinking, planning, acting—an *energizing* state, which is neither wholly bad nor indiscriminately good. Faced in the right spirit and with the right technique, the conflict situation affords an opportunity not simply for the gain of one part to it, but for the *victory of both.*

If the conflict situation is entered upon with a solemn resolve to use it as an occasion for organizing thought, will, happiness, rather than as a weapon for winning a decisive victory over one's opponent, then it may become a most fruitful stimulus to creative thinking. It may present an opportunity for real human energizing, bringing about that kind of settlement which will result in life's most fundamental satisfactions of scientific discoveries, harmony in the human relations, and moral values.



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Railroad Legislation Considered

WASHINGTON, D. C.

THE QUESTION of railroad legislation desired by the administration is under consideration, it was officially stated at the White House on December 9. There is still some doubt as to the possibility of attaining sufficient unanimity of opinion on the subject among those most interested to afford a fair opportunity for the passage of such legislation at the short session of the present Congress, crowded with appropriation bills and so constituted that the Republicans are not assured of control. Further conferences will be held for the purpose of ascertaining whether there is a possibility of bringing about some such compromise as Senator Cummins has suggested.

The President's views on the subject, it was stated, were expressed in his message to Congress, in which he recommended legislation to expedite consolidations by voluntary action and also a willingness to accept some modification of the labor provisions of the transportation act only on condition that the rights of the public are safeguarded. He was represented as believing that some arrangement might be made between the employees and the managers for legislation along some of the lines of the Howell-Barkley bill, and it was stated that he would be glad to see some efforts of that kind made, but that he had not changed the view expressed in his 1923 message that: "If a substantial agreement can be reached among the groups interested, there should be no hesitation in enacting such agreement into law. If it is not reached, the Labor Board may very well be left for the present to protect the public welfare." A similar thought was expressed in his message this year.

This statement of the President's attitude was made known shortly after Senator Cummins and Secretary Hoover had conferred with the President on the subject of railroad legislation with particular reference to the Howell-Barkley bill. Senator Cummins has indicated a belief that some of the ideas of that bill might be accepted if provision were inserted in it for what he terms a "board of decision," although many people are firmly convinced that a "decision" is the main thing the railroad labor organizations are trying to avoid. Secretary Hoover is understood to favor an attempt at agreement between the railroads and the labor organizations on the subject. It is understood that Senator Cummins suggested that the President call in a number of railroad men to see if any such agreement can be reached. He has said that he also expected to confer with the various interests interested in railroad legislation. B. M. Jewell, of the Railway Employees' Department of the American Federation of Labor, and Donald R. Richberg, counsel for the railroad labor organizations called on Senator Cummins last week and also interviewed other members of Congress with a view to having the Howell-Barkley bill referred back to the Senate committee in an effort to remove their objections to the amendment made to the bill by the committee last June.

The first railroad bill to be introduced at this session of Congress was the consolidation bill put in by Representative Winslow on December 8, which is in the direction of carrying out the ideas expressed by the President in his message. He gave no indication as to whether he intended to press it at this session. The House committee on interstate and foreign commerce met on December 9 and decided to hold hearings on a bill to regulate commercial aviation and also another bill before considering railroad legislation. At the last meeting before the holiday adjournment the committee will consider the question of what action to take on the Gooding bill.

Chairman Smith of the Senate committee on interstate commerce has been talking about sending the Hoch-Smith rate revision resolution back to conference for admendment to eliminate the words referring to the "existing depression in agriculture" but has as yet taken no action. This would give an opportunity for a reconsideration of the resolution, which is in line with recommendations made by the President last year which he did not repeat in his message this year.

On December 10 Representative Snyder of New York addressed a meeting of the House committee on interstate and foreign commerce on his bill to provide additional penalties for railroads and their officers for failure to comply with orders of the I. C. C. on train control installation.

Freight Car Loading

WASHINGTON, D. C.

BECAUSE of the Thanksgiving Day holiday freight car loading dropped during the week ended November 29 to 878,631 cars, but this was an increase of 43,550 cars as compared with the corresponding week of last year and an increase of 38,219 cars as compared with 1922. Increases as compared with last year were shown in all districts except the Eastern and in all classes of commodities except coke and ore, the increase in coal amounting to 15,420 cars and the increase in miscellaneous amounting to 15,766 cars. Loading of livestock, coal and coke, on the other hand, was less than that during the corresponding week of 1922. The summary as compiled by the Car Service Division follows:

REVENUE FREIGHT CAR LOADING

Week Ended Saturday, November 29, 1924

Districts	1924	1923	1922
Eastern	200,485	202,787	206,961
Allegheny	174,308	169,175	181,590
Pocahontas	44,858	33,063	28,726
Southern	139,706	127,265	124,412
Northwestern	105,775	105,429	106,275
Central Western	140,512	134,693	138,006
Southwestern	72,987	62,669	54,443
Total Western	319,274	302,791	298,723
Commodities			
Grain and grain products	49,325	45,673	49,319
Livestock	32,762	31,652	34,558
Coal	172,033	156,613	183,510
Coke	10,632	11,094	12,859
Forest Products	67,155	64,859	59,989
Ore	11,481	12,356	11,188
Mdse., l. c. l.	221,895	215,252	199,775
Miscellaneous	313,348	297,582	289,214
Total	878,631	835,081	840,412
November 22	1,010,122	990,299	946,642
November 15	1,015,704	992,050	957,564
November 8	994,504	1,036,221	944,186
November 1	1,073,430	1,035,849	979,851
Cumulative total, January 1 to date	45,055,554	46,505,389	39,888,799

With the seasonal decline in loading the freight car surplus increased during the week ended November 30 to 183,914 cars, including 82,819 coal cars and 73,547 box cars. The Canadian roads had a surplus of 6,750 cars including 3,600 box cars.

Car Loading in Canada

Revenue car loadings at stations in Canada during the week ended November 29 were 3,270 cars less than the previous week. Grain loading was lighter by 2,564 cars, all in the Western division. Coal was down 624 cars and pulpwood was heavier by 513 cars. Other commodities showed minor changes. Compared with the same week last year grain loading was lighter by 5,094 cars, and other forest products were down 398 cars, but all other commodities showed heavier loadings.

Commodity	For the Week Ended Nov. 29, 1924	Nov. 22, 1924	Dec. 1, 1923
Grain and grain products	15,229	17,793	20,323
Live stock	2,982	3,203	2,855
Coal	7,831	8,455	7,319
Coke	375	310	277
Lumber	3,664	3,558	3,590
Pulpwood	1,545	1,032	1,372
Pulp and paper	2,089	2,106	1,976
Other forest products	2,409	2,158	2,807
Ore	1,135	1,409	930
Merchandise l. c. l.	15,612	15,690	14,300
Miscellaneous	12,065	12,492	11,438
Total cars loaded	64,936	68,206	67,187
Total cars received from connections	31,329	31,019	32,144
Cumulative totals to date—1924			2,705,037
1923			2,636,612

Relation of Railroad, Motor Truck and Bus

New England Holds Two-Day Conference to Harmonize and Co-ordinate Existing Transportation Methods

THE RELATION of the motor truck and the motor bus to the steam and electric railways of New England and possible means for harmonizing the differences and co-ordinating the facilities of each to the ultimate benefit of the public and the agencies involved was discussed at a two-day conference held on September 8 and 9 at the Hotel Copley-Plaza, Boston, Mass. While called primarily to discuss the problems of New England, most of the principles and practices involved and recommended were of a national character. It was generally recognized that the motor truck and bus would remain and grow as a transportation facility and it was agreed that proper regulation with certificates of public convenience and necessity should be required in order to eliminate unfair and wasteful competition in the general transportation field. The meeting was sponsored by the National Automobile Chamber of Commerce and was attended by over 300 representatives of steam and electric railways, motor truck and motor bus operators and associations, public bodies and industrial concerns and associations. This conference is expected to be the forerunner of other similar meetings to be held in various congested sections of the country.

Two half-day sessions with the conference meeting as a whole and two half-day sessions with the conference split up into sections were held. Three sections were formed covering the subjects of motor trucks, motor buses and highways, of which only the first two were of interest to the steam railways. The first section dealt exclusively with the relation of motor trucks to steam railways. The second section, while covering a subject with which the steam railways are also concerned to some extent, dealt almost exclusively with the relation of the bus to the electric railways or trolley lines. Among those who presented papers of interest to the railways or who took leading parts in the conduct of the conference were Gerrit Fort, vice-president of the Boston & Maine; C. L. Bardo, general manager of the New York, New Haven & Hartford; G. C. Woodruff, general freight agent of the New York Central; R. H. Newcomb, assistant to vice-president of the New York, New Haven & Hartford; A. H. Swayne, vice-president of the General Motors Corporation and J. M. Swift, president of the Interstate Limited Motor Coach Company.

Much of the mistrust, misunderstandings and difficulties which have existed between the various transportation agencies came in for frank discussion and a foundation was created for a better understanding of each other's problems. It was generally recognized and accepted that motor transportation was past the experiment stage, that it was certain to grow and that it was fulfilling a public demand. It was realized that much unfair and unprofitable competition existed and that the future of the transportation industry required proper and uniform regulation by state or national bodies.

It was agreed upon that the motor transportation agencies should be conceded no advantages over rail transport and that they must pay their fair and proportionate share of the taxes. The enacting of laws was advocated which would permit the steam and electric railways to own or operate motor trucks and buses as such. The utilization of motor trucks for pick-up and delivery service was shown to be advantageous to all of the interested parties and in this, all apparently concurred. In respect to this, offers were made by the New York, New Haven & Hartford to make any necessary analysis and to go fully into the subject with any responsible trucking company which desired to install a pick-up and delivery service in the larger New England cities which that road serves. In order to crystallize the sentiments of the conference and to present them in definite form a committee of 15 members was appointed to consist of five representatives of the public and two representatives for each of the five other interests involved, namely, the steam railways, the electric railways, the motor trucks, the motor buses and the sponsor body and to submit at the final session the recommendations of the conference.

The more detailed business of the conference, covering such papers which are of interest to railway men, and the recommendations as adopted at the final session are given in abstract as follows:

Recommendations of the Conference

The test of experience has demonstrated the wisdom of reasonable regulation of common carriers in the public interest. Unregulated operation of common carrier motors can only adversely affect the public right to uninterrupted, dependable and efficient transportation. It is unfair also to those agencies which are regulated and to the existing motor carrier operators themselves whose service to the public cannot be best maintained if it is subjected to a constant wasteful attack from "fly-by-night" and financially irresponsible operators.

Regulation of the common carrier motor should be vested in a state authority charged with the task of providing the public with the transportation which it requires. It should be so regulated, as to secure the best service to the public and to insure continuity and reliability of service, sound financial organization should be shown also.

Such state control over motor vehicle common carriers should be placed in existing commissions of the various states.

As a pre-requisite to the operation of the motor vehicle common carrier, the owner thereof should be obliged:

a—To receive a certificate of public convenience and necessity, provided that lines in bona fide operation on the first calendar day of the legislative session at which the law is passed shall be presumed to be necessary to public convenience and necessity and such lines in the absence of evidence overcoming such presumption, shall receive a certificate for routes established by them.

b—To take out liability insurance to indemnify injuries to persons and passengers or damage to property and cargoes resulting from negligent operation.

The state regulatory bodies' control over motor vehicle common carriers should be vested with the powers they exercise in controlling other forms of public utilities.

Taxes on motor vehicle common carriers should consist of:

Those imposed in the particular state upon motor vehicles, the proceeds from such taxes being limited to the maintenance of properly located and improved highways, and such proper share of other highway costs including construction as will not be undue burden to the individual motorist.

Legislation should be enacted enabling steam railroads, trolleys, shipping companies and other public utilities to acquire, own and operate motor vehicles in conjunction with their regular lines of business.

The public authorities of the several New Engalnd states charged with common carrier regulation, join in the formulation of uniform state statutes for legislative consideration

in order to place these motor carriers under reasonable control.

Regulation of highway traffic, including size, weight and speed of motor vehicles should be lodged with state highway departments and made as uniform as possible.

The development of highways designed to meet the economic traffic requirements should be continued under the present plan of federal and state co-operation.

It is the sense of this conference, that in order to promote the principle of co-operation of the respective parties, and co-ordinate the equipment and facilities of the railroad and truck interests, in the furtherance of great efficiency and economy in the handling of freight, that the trucking interests in the several localities of heaviest traffic appoint committees to act with similar committees appointed by the railroads to make a comprehensive and unbiased study of the problem. In order to continue the relations established through the New England Transportation Conference, a permanent committee should be created to be known as the New England Transportation Council and consisting of equal representatives from each of the several agencies represented in this conference together with representatives from the general public.

Motor Vehicles Should Be Subject to Regulation

By Alfred H. Swayne
Vice-President, General Motors Corporation

New England is demanding better transportation facilities, and at lower cost. Either the railroads, the trolley companies, and the existing independents will develop motor routes to meet present and future needs, or outside groups will come in and build up a profitable business by giving this service. The point is that the time of experimentation is past. The public is clamoring for better service, and the question is: Who will take the leadership in this vast new phase of transportation?

There has been a growing recognition during the past few years of the principle that one engaged in the business of common carrier by motor vehicle should be subject to regulation as to its rates and service just as any other common carrier. Destructive rate cutting is thus prevented and duly authorized motor vehicle common carriers are accorded the same protection given to other public utilities, this at the same time providing the greatest measure of useful service to the public. Through judicious regulation and only in this way, will it be possible to obtain efficient, economical and adequate co-ordination of steam, electric and motor transportation service. Municipal regulation frequently interferes with the effectiveness of the common carrier service and the principle of regulation by state regulatory bodies has been quite generally adopted.

In all cases the right to operate should be contingent upon the granting of a certificate of public necessity and convenience and in the interpretation of that phrase, the right of the public to select within reasonable limitations the type of service which it desires, will have to be met. In some cases it may be found that motor transport particularly by passenger bus, will meet the public need more fully than would any other type of conveyance. In some cases parallel types of transportation are desirable.

Motor Vehicles Should Be Granted No Favors

As for the matter of taxation—always a moot issue—while decrying the principle that makes transportation the agency for taxation, it is my belief and that of my associates in the motor industry that the common carrier motor vehicle should be granted no favors which give it an undue advantage over the other agencies. If one agency is to be taxed, the other should be taxed.

The question of which transportation facility is to occupy a given field will then be determined solely upon the relative service rendered to the public and after all that is the only way in which any of these questions can be solved.

As a basis for discussion I suggest the two following principles which have been advanced by representatives of the rail, waterway and motor interests:

1. The best interests of the public and the rail, water and motor carriers lie in co-operation between the various agencies of transportation rather than in wasteful competition.

2. The greatest opportunity for co-operation is at the points where the capacity of the railroads is most limited and expansion is most difficult and costly; that is, in the terminal areas of our great cities.

The Railroads and Highway Transport

By C. L. Bardo
General Manager, New York, New Haven & Hartford

The American public has at last given organized expression to the fact that efficient and economic transportation by rail is indispensable to the welfare of the nation and it therefore follows, as a matter of equity and of simple justice that these rail transportation facilities are entitled to such protection against all forms of unfair competition as may be necessary to enable the rail transportation companies to maintain their plants and to render adequate, efficient and safe service to the public. This is our view regarding this fundamental question.

It can be further stated, without question, that the railroads have rendered during the past year adequate and efficient transportation and that they are the only agency equipped to perform efficiently the great mass movements of the commerce and people by land.

Highway Competition Decreases Revenues

The first question that naturally presents itself in dealing with the matter of highway competition as related to the automotive industry is how and to what extent has this form of competition cut into the revenues of the railroad?

There is no way of definitely ascertaining these facts, but as an index of what has taken place as a result of the increased use of the automobile I would say that in 1914 we sold 33,954,511 local tickets, producing a revenue of $18,719,184, at an average price of 55.13 cents. In 1923, we sold 24,284,226 local tickets, a decrease as compared to 1914 of 9,670,285, with a revenue of $33,544,190, at an average price of $1.38. Had we sold the same number of local tickets in 1923 that we sold in 1914, at the 1923 rate, our income from this source would have been $46,901,366, or an increase of $13,300,000 as compared to the same item of revenue in 1914, an amount equivalent to a dividend of 8.7 per cent on the entire capital stock of the New Haven.

Checks which have been made by outside agencies on the Connecticut highways covering 175,346 passenger cars and 40,613 trucks, bring out the following outstanding points:

Average persons per car	2.5
Average car mileage per trip	45.1
Per cent car mileage for business	35%
Peak month of traffic	October
Per cent trucks averaging under 30 miles per trip	78%
Per cent total net tonnage hauled less than 30 miles	67.4%
Per cent of truck movement unloaded	33.0%
Per cent of tonnage hauled on contract basis	75.0%

These checks covered the period September 11 to December 3, 1922, and indicated that there was a total of 1,019,688 net tons moved by motor truck, or about 3.5 per cent of the total net tons moved by the New Haven for the entire year. If the net tonnage moved by the motor trucks during this period was projected for the entire year upon the same basis it would amount to 4,430,715 tons, or 15.3 per cent of the net tonnage moved by the New Haven for that year.

If this Connecticut traffic had moved by rail at the pre-

vailing average net ton mile earnings, our gross freight revenue for 1922 would have been increased to the extent of about $4,250,000. If we double this estimate of the Connecticut truck traffic to cover the remainder of the system we have a combined loss in gross freight revenue amounting to about $8,500,000. Coupling the estimated annual loss in local passenger earnings for 1923 of $13,300,000 with this amount we have a grand total of $21,800,000. Giving due regard to the fact that some of the passengers formerly using local tickets are now riding on other forms of rail transportation, and that some of the freight traffic handled by motor trucks is non-competitive, it is a fair statement that something in excess of half of this enormous sum represents a direct loss in the gross revenues of the railroad company due to highway trucks and automobiles. Having by large expenditures brought our railroad capacity to a point more than adequate to carry the highway and rail traffic we submit that the public is under some obligation to protect us.

An interesting feature of this analysis relates to the average length of truck haul of the several commodities, which is as follows:

Product of mines	15.6 miles
Agriculture	29.4 miles
Animals	34.8 miles
Forest	35.8 miles
Manufactures	49.0 miles
Weighted average	43.5 miles

Another interesting feature of the comparison indicates that 26.3 per cent of the freight was carried by trucks of from ½ to 1½ tons capacity; 19 per cent by trucks of from 2 to 2½ tons capacity; 20.4 per cent by trucks of from 3 to 4 tons capacity; and 34.3 per cent by trucks of from 5 to 7½ tons capacity.

What has taken place on the highways of Connecticut, is to a greater or less degree, taking place on the highways of other states through which we operate.

One of the fundamental requirements imposed upon the New Haven by the commercial and industrial needs of the community is that of service at least daily with respect to freight, and 35 per cent of our total freight train mileage is devoted to serving these local requirements. The average lading of these trains is materially below the tonnage rating of the locomotives, and therefore a substantially increased volume of traffic could be handled in these local territories at a very slight increase over the basic cost figures. The same comment applies to local passenger traffic.

The late President Harding gave voice to the following on the subject of motor trucks:

"We ought to turn the motor truck into a railway feeder and distributor instead of a destroying competitor. With full recognition of motor car transportation, we must turn it to the most practical use. It cannot supersede the railway lines, no matter how generously we afford it highways out of the public treasury. If freight traffic by motor were charged with its proper and proportionate share of highway construction, we should find much of it wasteful and more costly than like service by rail. Yet we have paralleled the railways, a most natural line of construction, and thereby taken away from the agency of expected service much of its profitable traffic, for which the taxpayers have been providing the highways, whose cost of maintenance is not yet realized. Costly highways ought to be made to serve as feeders rather than competitors of the railroads, and the motor truck should become a co-ordinate factor in our great distributing system."

On January 10, 1924, a transportation conference called by the Chamber of Commerce of the United States passed, among others, the following resolutions:

4. The best interests of the public and of all transportation agencies lie in co-operation, and the greatest oportunity for this co-operation is in the terminal areas.

5. Store-door delivery by motor truck is the greatest contribution which can be made to the solution of the terminal problem.

6. Organized motor transport can also relieve the railroads of various forms of uneconomical service, such as trap-car service, switching between local stations, and short-haul shipments. This will reduce yard congestion and release many cars for more profitable line haul.

7. To secure the fullest benefits from this organized motor transport will require the utilization and further development of modern mechanical equipment.

8. Outside of the terminal area it is to the public interest, as well as to the interest of the respective carriers, that the economic limitations of each type of carrier be recognized, that the railroads be permitted to discontinue unprofitable service to which the motor is better suited, and that the motor abandon its efforts to handle general traffic over uneconomic distances. Unprofitable steam railroad service can in some cases be successfully replaced by the use of self-propelled railroad motor cars.

9. Rail lines can often advantageously extend or supplement their service by motor bus and motor truck lines, and in states where this is now prohibited such restrictions should in the public interest be abolished.

10. To insure to the public reliability of service in all forms of motor transportation, sound financial organization, public regulation and continuous service are necessary.

11. The proper regulation of common-carrier operations of motor vehicles, including the rates, should be handled by the existing authorities which now control the operations of other public carriers. It is believed to be to the best interests of all concerned that proper regulations of traffic and of size, weight and speed of motor vehicles by states and municipalities should be made uniform.

We are in complete harmony with the views herein expressed, provided that it does not result in an unnecessary or wasteful duplication of service where adequate transportation facilities are already being furnished.

The question is—how, by what agency and upon what basis can this co-ordination be brought about? I think it can be fairly stated that as a by and large proposition our present highway methods of distribution of local traffic from the railheads, particularly in our industrial centers and cities, can be much improved, the efficiency increased, a better utilization of equipment and facilities brought about, and the costs to the individuals and the communities very substantially reduced.

Any move in this direction must primarily have the support of an organized constructive public opinion and must be, in the last analysis, backed by an organization with the necessary capital and brains in each traffic center to provide the equipment, maintain the service, and protect the shippers and consignees against loss. We stand ready to extend our co-operation and help toward the co-ordination of these agencies in any city or town where there is promise of this fundamental support.

Motorized Passenger Service Is Here to Stay

By James M. Swift
President, Interstate Limited Motor Coach Company

It is well known that all through the country outside of New England, at the present time, and for several years past, modern comprehensive motor coach systems have been operating from all the larger cities; and in some of the western cities in regular net-works from place to place within the several states as well as in interstate transportation. They have demonstrated beyond present argument that there is a place for the motor coach and motor bus, independent of, and in addition to, the railroad and street railway systems. Perhaps it was not to be expected that railroad officers, trained to think in railroad terms and anxious to conserve the railway investments, would be the pioneers to undertake this new form of transportation. Their minds were on steel rails and not on rubber tires.

Many charges have been made against motor bus lines and motor coach operations by the railroads, that they were "wild-cats" and "fly-by-nights," without permanent routes or termini and operating without discipline, without regard to the rights of the road, and often by persons financially irresponsible in case of accident to passenger or traveler on the highway. Manifestly, such operation could not be permanently, or even for any length of time successful.

This was early recognized by the more responsible motor coach operators in this section and the Motor Coach Association of New England was formed, for the purpose primarily of standardizing the service so that discipline should be enforced and the coaches operated under conditions assuring the public of safety and protection.

With no regulation by Congress covering interstate commerce in this regard and the statutes of the different states being at least open to question as to their authority with reference to interstate commerce, it was the aim of this association to furnish reasonable rules, discipline and regulations to supply the requirements that might otherwise have been established by provisions of law.

Therefore, convenient terminals have been obtained and standard regulations with reference to safety of operation, conduct of the drivers of the coaches on the road, rest periods for the drivers, limitation of their days' work, good wages, medical examinations before acceptance as drivers, and other requirements have been worked out to assure the public of as reasonably safe operation of motor coaches as could be obtained by any requirements of law. We believe that they are even more effective than statutory enactments would be.

This is not to say that the members of the New England Motor Coach Association are against municipal or state regulations for they are in favor of it in the interests of standardization and of public safety. Their present requirements are only in lieu of, and in addition to, such requirements as law may impose. There is no doubt in our minds that there should be standard uniform requirements with reference to independent bus operations, but they should be reasonable to permit efficient maximum operation, with the least danger and inconvenience.

One of the contentions of the railroads is that competition of motor coaches is unfair because they do not pay a proportionate tax compared with the railroads, or street railways. The question of tax is always an arguable one, but we expect, of course, to pay all taxes, that may be fairly required from motor transportation. To our mind, this should be based upon the proportionate use of the highways. As the railroads have exclusive use of their rights of way, they should, of course, pay more taxes than motor coaches whose proportionate use of the highway, measured by its use by hundreds of other motor vehicles, is comparatively infrequent. It is no time to work out definite ratios in this connection, but fair consideration of the use by motor coaches of the highways will show that they should not be taxed in any such excessive amounts as sometimes have been proposed.

In any event, operations to date have demonstrated that changes must be made in the railroad field; that street railways must reorganize and re-vamp much of their out of date operations; and that even after all these things have been perfected, there will still exist a definite field for the operation of inependent motor lines by those who have demonstrated their fitness and ability to thus carry on public service transportation.

The Railroad's Relation to Motor Trucks

By G. C. Woodruff
General Freight Agent, New York Central

To hold to the view that the motor truck, as such, is an enemy of the railroads is frankly untenable, and almost equally absurd is the view that it is a competitor for, essentially, competition implies at least fair competition and there can be no such thing between an industry such as the railroad and a subsidized industry such as is the commercial motor trucking line as it functions today. This same term may as well be properly applied to the motor truck as used by private industry in transporting its goods between points served by the railroads.

It must be assumed, therefore, that motor trucking, as it exists today, is temporary and transitory at best and that ultimately when questions of jurisdiction and regulations are settled, when taxation shall have been so adjusted that the trucks bear their fair share of the expense of that which they use, when such truck lines have become common carriers either intrastate or interstate and under filed tariffs, are obliged to accept that which is offered and not select the "cream" of the business, then the mushroom motor truck line cannot exist and those which do operate will only do so because they can do so better than the railroads between given points.

When such a condition of affairs is actually a fact the railroads can undoubtedly look with complacency and friendly eyes upon the service units so established and operated by the motor trucks.

In the meantime to all thinking people the situation can only appeal as being unfair and basically unsound until the trucks are prepared to furnish satisfactory service in all ways for the industrial needs of the section served at a cost no greater than charged by the railroads. Whether this could ever go beyond purely local or short haul traffic is at least debatable, but assuming it could not, the railroads must still continue to serve the industrial needs of the nation in long haul or heavy and bulk freight.

In investigating and working out of the possible uses for motor trucks by our company the New York Central found six principal spheres, which are as follows:

1. The use of motor trucks in station to station haul in lieu of way freight trains.
2. The use of motor trucks in cross haul from stations on one division to a transfer or station on another division to avoid rehandling through an intermediate transfer.
3. The hauling from the small to the larger station to make possible the concentrating into straight destination cars with consequent improved time and saving in expense.
4. The hauling from a central delivery station to smaller outlying stations where final delivery is made to the consignee.
5. The interchange between railroads and steamship lines and cartage in lieu of lighterage.
6. The trucking of unit containers for merchandise and coarse commodities, such as brick, etc.

In working out the details at any given point it has been our endeavor, so far successful, to work with trucking agencies already established with necessary equipment available to try out for a fair period any desired experiment. It has been almost impossible to arrive at a basic rate for the trucking service, for each undertaking presented varying conditions. Therefore the rates at the start have been set experimentally by agreement, subject to revision upwards if experience shows this to be fair to both sides. In some of the larger cities the rates have been fixed by bid, subject to certain maximum and minimum tonnage.

So far as our experiments have gone and where we have reason to feel the specific undertaking may be considered a success, we are led more than ever to believe that the railroad itself or through a subsidiary company should not undertake to perform the trucking but should only work with well established trucking lines or where such are not already established to endeavor to have them brought into being.

Attention should be given to the indiscriminate and possibly overzealous sales of motor trucks to irresponsible concerns who have no standing and little if any financial backing in resources. Every time this occurs there is at first a possible cutting of rates with some apparent temporary benefit but ultimate hardship to the motor industry as a whole.

The "Horatio Allen"

D. & H. Christens New Locomotive

Weighs 273 Tons—Carries 350 lb. Pressure—Maximum Tractive Effort 104,000 lb.

A MOST UNUSUAL event occurred on the Delaware & Hudson at Colonie, N. Y., on Thursday, December 4, in the christening of locomotive 1400. It was named after Horatio Allen, the first man to operate a steam locomotive on the western hemisphere, a grand-daughter, Mrs. R. D. Lewis of South Orange, N. J., breaking the bottle of champagne on the pilot in the presence of a large number of invited guests. Horatio Allen was commissioned by the Delaware & Hudson Company to go to England about 1828 to purchase four steam locomotives. One of these, the "Stourbridge Lion," from the works of Foster, Rastrick & Co. at Stourbridge, was set up at Honesdale, August 8, 1829, Mr. Allen acting as engineer on the first trip.

After the christening of the "Horatio Allen" the guests adjourned to dine in one of the nearby buildings, where a number of addresses were made, Col. J. T. Loree, general manager of the D. & H., presiding.

President Loree's Address

L. F. Loree, president of the D. & H., expressed his belief in the fact that the steam locomotive would have a large place in the future of the railways of this country. He said in part:

"For myself, I have an abiding faith that for the main purposes of the railroad—the transportation over long distances of heavy articles—the unit system of transportation will be the dominant one. The engine which has today been christened the 'Horatio Allen', in honor of the man who ran the first locomotive on the western hemisphere, is a step in the direction of insuring this position. The familiar self-contained type of multi-tubular boiler for steam locomotives, in combination with the superheater, has been retained. Instead of the usual water leg firebox with its undesirable flat sheets and staybolts, and the sluggish circulation of water, the firebox of the 'Horatio Allen' has been built up of self-supporting cylindrical structures. These are in the form of drums and tubes disposed horizontally and disposed vertically, requiring no stays, which are directly exposed to the furnace heat and which not only 'split up' the boiler water into small streams but also provide for its rapid circulation, thereby enabling quick absorption of heat and release of the steam bubbles.

"The 'Horatio Allen' will carry a steam pressure of 350 lb. To make this possible, the pressure-containing parts of the boiler, superheater, cylinders, piping and other connections have been correspondingly strengthened. In fact, a higher factor of safety has been used than is ordinarily provided.

"In order to limit to the lowest terms the problems involved, we have taken the most popular of our Consolidation locomotives. We have made no material changes other than those indicated, except that the steam is used twice, i.e., it is expanded in a high pressure cylinder on the right side, then exhausted into a receiver, and expanded a second time in the low pressure cylinder on the left side, before it is exhausted into the stack. By this means the steam is more fully utilized before it leaves the cylinders.

"In the construction of this locomotive a small auxiliary engine, known as a 'booster', has been attached to the tender. This device enables great concentration of power in starting the train and in moving it over comparatively short stretches of heavy grade. It is hoped that the 'Horatio Allen' will develop one-third more haulage capacity, with one-third less consumption of fuel and water, than the corresponding Consolidation locomotive. If these results are realized they mark a substantial advance in the efficiency of the unit system of transportation. Notwithstanding the greater heat in the boiler, the precautions taken in lagging its head will, we believe, reduce the temperature to which the engine crew is exposed.

"In the conditions of employment since the beginning of railroading, while the fireman has not been without benefit, there has, I think, inured to him a lesser proportion than to his associates. It is not the least of the merits of this design that for the same result his labor of coal handling will be lessened by more than one-third.

"This locomotive is a creation of management. The conception of the plan is basic, fundamental; and it is the organization, energy and direction of management that have given it effect.

"This locomotive is a depository of capital. It is a characteristic of wealth that its owners are in possession of real opportunities of consumption for speedy enjoyment, or of reservation for future enjoyment, or of employment for purposes of production. It is wealth that is reserved and applied to production under the direction of management that is generally called capital, and this reservation demands on the part of the owner great sacrifice and force of character.

"But the 'Horatio Allen', fine an example as it is of the art, striking as it is in its combination of management and capital, is a dead thing except in the hands of labor. He who looks with discerning eye to the contribution of labor, will fix his attention not on the output of physical energy,

which in comparison with the power of this giant machine is but a feeble emanation, but rather on qualities far more enobling—the complete discipline, the cheerful devotion to duty, the service carried on under every adverse circumstance, whether in wind and storms of rain and snow, or in fog, in the blackness of night, or the beauty of the day; the high intelligence brought to the safeguarding, as well as the handling, of the movements entrusted to the charge of the locomotive's crew."

Other Addresses

S. H. Huff, assistant grand chief engineer of the Brotherhood of Locomotive Engineers, spoke largely on the human side of locomotive operation and outlined the part which his brotherhood had had in serving its members.

J. G. Blunt represented the American Locomotive Company, President Fletcher being unable to attend because of illness. He emphasized the fact that the credit for the design of the locomotive belonged to the officers of the railroad.

J. E. Muhlfeld, consulting engineer, D. & H., who was introduced as the designer of the locomotive, paid a high tribute to President Loree because of his abiding faith in the possibilities of the steam locomotive and for what he had done in encouraging the development of larger and more effective power units.

Timothy Shea, assistant president of the Brotherhood of Locomotive Firemen and Enginemen, told something of the hardships which were endured by the firemen and emphasized the importance of the fireman in successful and economical locomotive operation.

A. G. Pack, chief engineer of the Bureau of Locomotive Inspection of the Interstate Commerce Commission, spoke in the interests of safety and the part which it should have in locomotive operation.

The event was a most unusual one. The new locomotive has been on the road several months and has handled its tonnage easily. Naturally, with such a radical change in design and the number of new features, there have been some difficulties, but these have been remedied, at least to a very large degree.

The locomotive will be given a thorough and severe trial during the winter months. Those who have watched its operation critically are optimistic over the prospects and believe it will mark a new era in locomotive development.

Slackened Interest in Safety Work*

AFTER THIRTEEN YEARS of organized effort to reduce industrial accidents American industry has just been told by government officials that fatal and non-fatal accidents have largely increased. Even Wisconsin, the pioneer and leader in industrial safety, which since 1911 has done exceptionally good accident prevention work, shows an increase of 25 per cent for the last year. In industry the increase in accidents has been almost wholly confined to plants of 500 employees or less and has been due principally to the fact that in these plants no safety engineer is employed. A survey conducted by the Elliott Service Company reveals the fact that similar conditions exist throughout the United States. There has evidently been a marked slump in the interest in safety among workmen, foremen and managers in industrial plants, public utilities and other commercial establishments; not only in plants which for years have been doing good safety work but as well in plants where accident prevention work has just recently been introduced. The difficulty of keeping interest in the subject alive after ten or fifteen years of campaigning is due chiefly to the lack of intensified educational work; the result of the plant manager's failure to give as earnest attention to safety as to production.

It is just as difficult to keep up interest in safety in a plant which has done excellent safety work as it is in those plants which still have bad accident records. Nearly every one of the 30 outstanding safety men consulted in this survey frankly said that he was at wits' end to devise methods and materials which will keep up interest. Not more than 10 per cent of the accident hazards of today can be eliminated mechanically; for the prevention of the remaining 90 per cent we must rely on education and supervision. Fifteen years of safety experience indicates the following needs:

1. The continuous identification of the manager with the safety work of the company through the posting on bulletin boards throughout the plant each month of a strong personal message from the manager under such a caption as, for instance—"The man who takes chances with his own safety gambles with the future happiness of his wife and children".

2. Similarly close identification of the foreman with the accident prevention program through a monthly message over the foreman's signature.

3. A graphic and striking visualization each month of the accident experiene of the plant with a human touch and a suggestion to the workmen of what accidents cost them and their families in dollars, in the effect on home life, and in the opportunities for advancement.

4. An attractively colored and artistically designed poster frame work, changeable weekly, on which can be pasted clippings, photographs, letters, official notices, or anything else pertaining to local accidents, danger spots or means of averting them.

5. The visualization of safety in a series of strikingly illustrated large posters, each poster bearing a slogan as, for instance—"Be careful or your friends may be saying 'how natural he looks'," "Ask the man who had the accident what he thinks of Safety," and "The man who endangers others is a criminal." The purpose of this type of poster is to change the attitude and the mental habits of workmen. The old emphasis of instructing the workman in the technique of his job which has been characterized in most of the safety posters developed during the last ten years and which has dulled the workman's mind to this subject should be abandoned. The new idea in safety posters is not to instruct the workmen in safety but to stimulate their interest in safety by reminding them, by ridiculing them, and by accusing them.

6. The education and inspiration of the foreman through a series of straight from the shoulder talks in leaflet form sent to the foreman's home, one each month, with a personal letter from the plant manager. There have been many courses of education for foremen but most of them have been so exhaustive and so little adapted for the foreman of meager education that they have had no effect on the great bulk of the foremen. Talks must be written in the language ordinarily spoken by foremen.

*Abstract of an address by C. W. Price, vice-president of the Elliott Service Company, New York City, before the Providence Safety Council at Providence, R. I., December 3.

SIX CENTS A MINUTE is the average cost of keeping an automobile truck on city streets, and in New York all trucks are compelled to waste so much time in waiting for right of way at congested freight terminals, that horses are coming to be preferred, as less costly. This is the opinion of Major Elihu Church, transportation engineer of the Port of New York Authority. He says that in most cities there is so much street congestion that use of motor trucks is seriously throttled. The cost of trucking is really measured by the time taken, rather than by the distance the goods are hauled. The cost of horse truck operation is about three cents a minute. Street delays and time consumed in loading and unloading trucks are so great that the motor often gets no opportunity to justify itself. Consequently, says Major Church, "the horse is actually coming back."

Development Association Meets in Chicago

Co-operative Marketing, Reforestation, Agricultural and Industrial Problems Considered

THE SIXTEENTH SEMI-ANNUAL MEETING of the American Railway Development Association was held at the Hotel Sherman, Chicago, on December 4 and 5. The meeting was divided into general sessions and section meetings. The general meetings included several addresses of interest to all sections and a "brag" meeting in which every member present spoke for two minutes on "The Thing of Which I am Proudest in my 1924 Record." In both the general meetings and the section meetings the desire for standardization of containers was expressed freely. A resolution was passed directing the executive committee of the association to appoint a committee to co-operate with the United States Forest Service in promoting reforestation.

Marketing Problems Discused by B. F. Yoakum

In speaking upon marketing problems B. F. Yoakum, formerly president of the St. Louis-San Francisco, discussed the mutual interest between agriculture and transportation. He called attention to the fact that from 65 to 75 per cent of the food consumed by the public is of perishable farm products and that figures of the Department of Agriculture for 1922 show that perishable commodities amounted to more than three-fourths of a million carloads. He said that co-operative marketing is the only method that can be employed to reduce the loss suffered by farmers and that the fundamental cause of the loss cannot be prevented or controlled by the railroads. To support his statement he compared prices of commodities paid by consumers with the amount received by the farmer and the railroad. He spoke in part as follows:

"The middleman's profit is the wall that blocks the way to farm prosperity and one which the railroads are powerless to remove. It is useless to seek a solution of the farm problem in any other manner; all kinds of investigations will in the final analysis lead to the same place. The spread between farm and consumers' prices is the only place where more money can be found for the farmer. Why try to further deceive him into believing he can get it from any other source?

"The balance between what the farmer received and what the consumer paid goes to multiplied profits, commissions and various rake-offs necessary for 19 million food population to live off of the 34 million farm population. No other policy that the railroads can advocate is comparable in importance to that of helping the farmer reach a state of independence through which he can free himself from the shackles of an excessive number of dealers now taking their 'pound of flesh.'

"The railroads can well afford to give their active moral support to the farmers in their life and death struggle to rescue their business from the throttling grip others have on it and who are taking unwarranted tolls. Such a policy would give to the railroads increased revenue. It would develop a situation where the farmers would break away from their political alliances —their pretended friends—and work hand in hand with their natural ally whose interest in them is mutual and profitable to both. Agriculture and transportation are indispensable to each other and both could make more money through team work than through the middle-politician whose interest is a selfish one.

"I have given a large share of my time for four years to the study of the agricultural problem and in trying to locate and work out its fundamental difficulties. I have gone into the matter in the same way and in as careful a manner as if employed by a syndicate to make an investigation of and report upon a big industrial proposition. I have gone into every phase of agriculture, even as to the legality of the plan under which the farmers can pool and market their products. I am, therefore, perfectly clear in every respect that the proposed plan of marketing farm products is safe, sound and profitable to the farmer and of the greatest benefit to transportation and a safeguard to the country's future. I hold that the cost of distribution can, with a big margin of profit, be rendered for 7½ billion dollars, as against the present cost of 15 billion dollars. I have never heard anyone claim that the spread between the low price paid the farmer and the high price paid by consumer was not out of proportion, but as a rule all content themselves by asking how can it be remedied. The remedy is simple."

Mr. Yoakum urged support of the Curtis-Aswell bill which provides for a marketing plan. Under the plan for marketing white potatoes for instance, he grouped the states into seven or eight zones, keeping in mind large consuming centers and transportation facilities. He established operating headquarters for such an organization at Chicago through which an orderly distribution of potatoes would go to the different markets to meet the requirements of the consumers. The expense of organization would be borne from the revolving fund of $10,000,000 as provided in the Curtis-Aswell bill, which fund would be borrowed from the government at the rate of 4½ per cent per annum. He said that after the principles of the Curtis-Aswell bill were once established and its practicability determined growers of other commodities would organize on the same plan.

H. A. Smith Speaks on Reforestation

Forestry in this country would make rapid progress if railroad men clearly understood the relations between the right use and full employment of forestry plans and the prosperity of the public and the railroads according to Herbert A. Smith, assistant forester of the United States Forest Service, in his address on "What Reforestration Means to the Country." He said that our national habits and standards of living necessitate a continued large use of wood and if we are to continue to have wood we must have reforestation on a large scale. Mr. Smith spoke in part as follows:

What reforestation means to the country, it means equally to the railroads of the country. The railroads themselves consume a large part of the annual cut of timber. It takes two trees growing in the forest for each tie laid in the track, to provide for renewal. The transportation of forest products is one of the large sources of railway freight revenue. A timber famine will fall very heavily on the railroads, both as consumers and as carriers of freight.

Many of the railroads not only see this, but are beginning to ask seriously what they can do about it. They are alarmed at the prospect of a decline in business, as the forests are cut off. They realize that non-productive land means rural impoverishment, loss of population, decline in property values and higher tax rates. Skinned, idle, practically worthless land is as unprofitable to the railways as to the communities that they serve.

The railroads can do much to hasten reforestation. Forestry is a part of diversified agriculture. Farmers own almost one-third of all the forest land in the country. When they learn how to grow good timber crops on the parts of their farms for which timber is the best paying crop, instead of letting trees grow as a wild land product or letting the land lie idle, the farmers will be more prosperous and the country's forest problems will be in large part solved. The railroads are trying to encourage and teach better farming. Why not include forestry as a part of better farming?

But forestry must be helped along by public action. Every state in the great forest regions should have a forestry department and an efficient system of forest fire protection. An active and intelligent public sentiment is fundamental if reforestation is to become customary.

Section Meetings Considered Many Subjects

The agricultural section, in discussing the relation of agricultural products to railway incomes was of the opinion that anything done by the railroads to aid the farmer would be returned in the form of added traffic. R. W. Quackenbush, agricultural agent of the New York Central, showed

the relation of agricultural products to total tonnage as follows:

Large crops may possibly insure heavy tonnage directly, but on the other hand, indirectly, the tonnage may be much less than would accrue if a smaller crop had been produced. Unfortunately, when there is a large crop of agricultural products, the prices are relatively low, and in many instances this low price so curtails the income of those engaged in this industry as to reduce their purchasing power to a minimum, and to my mind it is the purchasing power which spells large tonnage rather than the tonnage of crops produced. It is sometimes the case of harvesting more crops to get less money to buy less food together with other necessities, rather than vice versa.

For the period ending December 31, 1923, there originated on the Class 1 railroads 137,425,568 tons of freight, covering the movement of agricultural products, including animals and animal products. The total of all commodities originated during this period was 1,277,318,731 tons. These same roads carried during this period a total of 269,396,446 tons of these same agricultural commodities, while the grand total of all commodities carried was 2,333,787,044.

In the case of total tonnage originated on Class 1 railroads, we find that agricultural products furnished 17 per cent of the total, while of the total of all commodities carried, agriculture furnished over 16 per cent.

Coming down to more recent figures, we find that for the three months ending June 30, 1924, the amount of agricultural products (including animals and animal products) was 25,864,895 tons, out of a total tonnage of 277,242,082, or 9 1-3 per cent; while the total agricultural products carried for the same period was 54,666,462 tons, out of a grand total of 506,541,670 of all commodities, or 10 1-5 per cent.

These figures do not include products of the mines, forests or those manufactured from agricultural raw material. If, as is often the case, we consider the products of the mine and forest as agricultural (which they really are, as they all come from the earth), together with the grand total of manufactured products, we will find that agriculture, instead of being responsible for from 10 to 15 per cent of the total railroad tonnage as outlined in above figures, is responsible for practically 100 per cent of the freight carried.

I believe that we can safely say, without any possibility of over-estimation, that if it were not for agriculture there would be no railroads; if there were no railroads industry would be at a standstill; with industry at a standstill labor would be unemployed; with labor unemployed there would be no demand for agricultural and manufactured products—and we can go on through an endless circle relative to the interdependence of one industry on the other. Therefore, instead of being satisfied with the fact that if it were not for agriculture civilization could not continue, let us take this fact for granted and proceed along lines already established—to make conditions so much better in all lines of industry that agriculture will hold its true place in the great order of things, and every one of us (whether connected with these two great industries or not) will obtain our proper share of the benefits to be derived from all pulling together.

W. H. Olin, supervising agent of the Denver & Rio Grande Western, described the progress made in the reduction in claims on perishables, citing as an example a shipment of 1,000 cars of strawberries from the South to Chicago, in which only $300 in claims were incurred. As a means of reducing claims he suggested that the quality of produce grown be increased rather than the quantity, thereby making the product fit the market. A general discussion on containers brought out the fact that the gum barrel was not satisfactory for potato shipments. In the discussion on the quality of product it was disclosed that the farmer could secure higher prices for his products if his products were in accordance with the market demands. An example was cited in which hotels that use a rotary machine for peeling lost 35 per cent of the potato when using the ordinary long potato and were willing to pay 25 per cent more for potatoes if they could secure round ones.

The discussion of the publicity section showed that newspapers and magazines were ready to publish information submitted but were somewhat opposed to accepting material that appeared to be written for free publicity. It was also felt that officers of the roads should be more prompt in giving information of news value to the publicity department so that the department could give such information to publications before the news value was lost.

At the joint session of the agricultural and publicity section, G. A. Cardwell, agricultural and industrial agent of the Atlantic Coast Line, spoke on railroad co-operation with state fairs and agricultural expositions. In his paper he had incorporated the answers to questions sent in by 37 carriers. He showed that a number of carriers have co-operated in a more or less general way with state fairs and agricultural expositions. Of the 37 replies received 30 roads were not contributing financial aid. Fares for round trips granted ranged from half rates to a fare and one-half for the round trip. In one instance a rate of one cent a mile was charged for special excursions. A fare and a half and a fare and a third predominated in the replies received. Full rate is assessed on articles transported for exhibition at expositions or fairs held under public auspices. When exhibited at one exposition or fair and then returned to the point of origin by the same railroad used in the initial movement, free movement is granted returning if articles are returned within 30 days after the close of the exposition or fair at which they are exhibited and the bill of lading therefor is accompanied by a certificate from the secretary of such exposition that such articles were exhibited and had not changed ownership. When moving over a circuit of expositions or fairs the articles are waybilled at regular tariff rates to each point of exhibition and at the close of each fair, on presentation of a certificate from the secretary of the fair showing that such articles were exhibited thereat and that no change of ownership had occurred, the inbound charges are reduced to one-half of the tariff rate and when re-shipped from the last point of exhibition to the original point of shipment by way of direct route and the bill of lading is accompanied by a similar certificate from the secretary of the fair or exhibition, one-half of the tariff rate is applied.

Twenty roads stated that they had not placed exhibits at fairs or expositions. Others reported exhibits in the nature of field crop displays, model homes, lawns and orchards, passenger and freight information booths, motion pictures, and other features of general interest to the public relating to railway activities and livestock. Nineteen of the roads answered that their exhibits make a special appeal to farmers. Nine of the roads reported that they assist individuals or crops in preparing or in making exhibits. Fourteen roads influenced the exhibition of new crops in agricultural industries, while eleven do not.

The industrial section, in discussing the elapsed time between an applicant's request for side track and the issuance of authority to the engineering department to proceed with the construction, generally felt that the industries would be better served if shorter and quicker methods were adopted for the working up of details for the installation of side tracks. It was also suggested that the industrial department be allowed to make its own surveys and estimates. Of the members present one-third reported that the time consumed in granting a request for side tracks ranged from 10 to 15 days while two-thirds reported that the time required was from 30 to 60 days.

A YARD CONDUCTOR FINED $25 on account of a slight collision, is the main point of a recent item in the Pennsylvania News. It is not fresh "news," however; the item refers to a letter received by a yard conductor from his superintendent, on the River division of the Allegheny Valley, now the Allegheny division of the Pennsylvania, in December, 1881. The letter says: "The cost of repairing combination car No. 17, damaged by your accident at 32d street on November 28 is $47.81. I have concluded, in consideration of all the circumstances and your previous good record, to let you off with a fine of $25, payable in five monthly installments of $5 each. Should your conduct continue good and your record be free from accident during the next three months, I may, at the end of that time, remit the portion of your fine then remaining due."

Securing Effective Car Department Service*

A Consideration of Methods Adopted to Make the "Milwaukee" Car Department Function Effectively

By L. K. Sillcox
General Superintendent of Motive Power, Chicago, Milwaukee & St. Paul, Chicago

SERVICE, SUCH AS IMPLIED in the title of this address, is dependent on an adequate organization, properly selected, adequately directed and constantly followed up. The elements involved are both human and material. In the first place, it is understood that each administration has its problems presented in a way peculiar to itself, so that any suggestions for change ought to be carefully weighed and, if found at all desirable, modified or improved upon to fit the actual condition in mind, then woven into the policies already obtaining, to the extent found most favorable to an enlargement and betterment of existing methods. Changes are hardly ever profitable, if hastily carried out; confusion and distrust are avoided if time is taken to consult with and receive suggestions from those directly affected.

A great deal of pressure is brought to bear from certain sections for even larger management units than we now have and yet the dangers of such a move are not often thought of and even less evidently expressed. There are those who urge more extensive railway grouping, those who feel that all of the freight cars in the country should be constructed, operated and maintained by one single organization and quite a number of other propositions similar in purpose, which are brought to attention from time to time. It is important in every circumstance where judgment must be passed to seek fundamental facts and principles. The aim should be, in any event, to preserve the personal equation and if large management groups can be so skillfully conducted as to meet this need, much of possible danger is avoided. Again, attention is directed to the thought that in any endeavor where individual initiative is lacking or conditions make the exercise of it unimportant, we are sure to travel in a negative direction. Competition is a necessity either in business or for a healthy sense of personal merit.

The one great thing that keeps the railroad service of our country to the present standard it has attained, even though some properties are not able to operate on a paying basis, is the element of attainment; still the public reaps the benefit. There is a fact to be reckoned with in our daily life as railroad men which cannot be expressed in dollars and cents. It is given freely, wholeheartedly and constantly —an ever living pride in the operation of the railroad each of us may be privileged to serve. I hesitate to bring so much data from the administration I am connected with, but if it is accepted as a few leaves from our book of experience and never in the sense of self-satisfaction, I shall feel some good has obtained. In addition let me say that such

SCHEDULE REPAIR PROGRAM — PROGRESS REPORT — MONTH OF OCT. 1924

Schedule	Series	No. Cars Owned 1st of Month	Cars Retired During Mo.	Cars Owned end of Month	Total Cars Completely Overhauled to 1st of Mo.	Total Completely Overhauled This Mo.	Total Completely Overhauled to end of Mo.	Cars remaining to overhaul to end of Month	No. of Cars Covered by AFE to Completely Overhaul	No. of Live AFE	No. of Cars remaining to cover by AFE to be Complete Schedule
1	51900-68198	2476	None	2476							
1	68300-69524	155	None	155							
1	70526-72524	293	None	293	4102	None	4102	None	402	None	None
3	72526-81478	2948	4	2944	535	11	546	2395	1500	5624-8968-9685	1444
4	87484-93480	2888	None	2888							
4A	81482-83480	947	None	947							
4	500000-506204	6017	None	6017	3355	61	3416	6436	6000	8966	3852
5	83482-87480	1860	None	1860							
5	200000-206499	6084	None	6084	6794	22	6816	1128	7948	7256	None
7	700000-703999	3989	None	3989	2	None	2	3987	None	None	3987
9	506205-508204	1968	None	1968	None	None	None	1968	None	None	1968
10	590000-590249	247	None	247	None	None	None	247	None	None	247
16	206501-207470	914	None	914	650	37	687	227	914	8251	None
23	735-2999	631	None	631							
23	8149	1	None	1							
23	8425	1	None	1							
23	8267-12999	1059	None	1059	None	1	1	1691	25	11395	1667
24	10000-102499	2354	None	2354	None	None	None	2354	None	None	2354
27	68695-68999	152	None	152							
27	43001-45285	1073	None	1073	None	None	None	1225	None	None	1225
27A	15001-15671	140	None	140							
27A	26001-29675	757	None	757							
27A	47401-47999	198	None	198	None	None	None	1095	None	None	1095
29	32259-37257	2464	None	2464	None	None	None	2464	None	None	2464
31	29677-32075	1115	None	1115	None	None	None	1115	None	None	1115
32	300000-302499	2410	None	2410	1795	16	1811	599	2089	9918	321
34	25493-25891	169	None	169	169	None	169	None	169	None	None
39	48101-49999	693	None	693							
39	70001-70969	348	None	348	None	None	None	1041	None	None	1041
42	01-0767	418	None	418							
	0879-01340	311	None	311							
	01388-01453	39	None	39	9	3	12	756	40	11647-12417	728
	Total C.M.&St.P.	45119	4	45115	17411	151	17562	28731	22787		23508

Fig. 1—Schedule Repair Program—Progress Report Based on Detail Reports Confined to Location

*Abstract of a paper read at the regular monthly meeting of the Car Foremen's Association of Chicago, held December 8 at the Great Northern Hotel, Chicago.

presentation as is made should be credited to the faithful support accorded by my associates.

Car Design

It is necessary to adapt the question of car design to service (regardless of territory) with the object of having equipment which will give a maximum of return with a minimum of delay because of not being in the proper condition. The question of car design is ever progressing in that there is a rather constant advance in the methods of operation as well as *universal* and *interchangeable* use, which must be kept pace with in the design of equipment. For the past 15 years there has been a considerable increase in the size and tractive force of locomotives in order to meet the demand for larger individual trains and thus reduce the unit cost of train and engine crew expense per ton mile. This has brought about a demand for freight equipment which will meet the changing conditions so that there has been a very marked enlargement in thought regarding the matter of strengthening parts, especially in the body bracing, underframing, draft members, etc. In common with other carriers our experience shows that these conditions generally develop into a demand for a plan of work or a program of improvements to freight cars such as will cause the major portion of ownership to be universally acceptable as to strength requirements and protect the owning road in current maintenance expense. For this purpose an analysis of the equipment owned with a view to determining that which has not been giving the proper service or which could not be brought up to operating demands is imperative and can usually be divided into:

(1) Those cars built of recent years which are of such design as to practically meet present conditions with maximum service.

(2) Those cars which have been built prior to the operating change referred to, but which could not be dismantled consistently because of age, general design and capacity and, therefore, which can be made subject to a special improvement program on the basis of a study of physical characteristics.

(3) Those cars which because of age, capacity, design and condition are not considered fit to be improved and, therefore, can be run until worn out and then dismantled.

The second item was found to embrace from 25 to 35 per cent of the total equipment in our case, and was affected by the policy of the carrier, for some 20 years previous, as to the rate of turnover in acquiring new and retiring old equipment.

Improvement Program

It can be said, in general, where there has been a steady and accurate retirement program with an acquisition factor designed to offset the same, that it forms one of the easiest methods of overcoming obsolescence in design, but where retirements have been deferred with a consequent lack of new equipment acquired, the problem of overcoming obsolescence or the inherent design of equipment which does not permit of maximum service, is one involving large proportions and a great deal of expense when a change in policy is forced by reason of expanding service demands. Such a condition usually requires years to overcome. It is necessary to analyze each series of cars and determine what improvements or changes are required to make them fit for maximum service, then to work out a bill of material and labor schedule for each and determine the total cost. As a matter of convenience this plan is easily followed if each class of car is given a schedule number, the schedule representing the bill of material and amount of work to be done.

A program of this kind involves the selection of car shops best adapted to each kind of work with a corresponding organization of forces, stock of material, shop facilities, etc. The location of shops in the vicinity of loading stations is a factor of importance with respect to economy in transportation. Considerable supervision of such work is required to see that material is at hand to keep forces fully employed and that the work is done as prescribed and the

EXHIBIT NO. 1A

SCHEDULE WORK ON CARS

September 1924

Location	Schedule No. 3 Series: 72526-11478 Kind: Box No. Cars Owned 2948 Completed This Mo.	Schedule No. 4 Series: [illegible] Kind: Box No. Cars Owned 8905 Completed This Mo.	Schedule No. 4A Series: 81482-83480 Kind: Box No. Cars Owned 947 Completed This Mo.	Schedule No. 5 Series: [illegible] Kind: Box No. Cars Owned 7944 Completed This Mo.	Schedule No. 16 Series: 206591-207470 Kind: Auto No. Cars Owned 914 Completed This Mo.	Schedule No. 32 Series: 300000-302499 Kind: Gondola No. Cars Owned 2410 Completed This Mo.	Schedule No. 34 Series: 25495-25891 Kind: Ore No. Cars Owned 169 Completed This Mo.	Totals
CHARGE								
Lines East								
Minneapolis	-	-	-	1	-	-	-	1
Chicago	-	-	-	-	-	6	-	6
Milwaukee	9	25	3	20	24	-	-	81
Dubuque	-	-	-	-	-	-	-	-
Green Bay	-	-	-	-	-	-	-	-
Total This Mo.	9	25	3	21	24	6	-	88
" to date	301	1388	*	4074	384	1695	169	8011
Lines West								
Deer Lodge	-	9	1	-	-	-	-	10
Tacoma	-	11	4	-	3	-	-	18
Total This Mo.	-	20	5	-	3	-	-	28
Total to date	234	1908	*	2720	259	100	-	5291
System								
Total This Mo.	9	45	8	21	27	6	-	116
Total to date	535	3296	*	6794	643	1795	169	13302
Total to be Overhauled	2413	6496	*	1150	261	615	-	10935

*Schedule 4 and 4A work being done on one A.F.E. Figures for Total Lines East Total West, Total System to date and total to be overhauled for schedule 4 includes Schedule 4A
#Total to date lines East, Schedule 5 and 32, includes 969 and 749 cars respectively, completed in contract shops.

OTHERS

Location	Schedule No. A Series: [illegible] Kind: Coal No. Cars Owned 1701 Completed This Mo.	Schedule No. B Series 6500-6995 Kind: Coal No. Cars Owned 445 Completed This Mo.	Schedule No. C Series: 11000-13180 Kind: Gondola No. Cars Owned 2114 Completed This Mo.	Schedule No. D Series: 7000-7899 Kind: Hopper No. Cars Owned 892 Completed This Mo.	Schedule No. 1-A Series: 101-350 Kind: Box No. Cars Owned 187 Completed This Mo.	Total
Terre Haute	3	-	25	-	-	28
West Clinton	-	-	-	-	-	-
Bedford	-	-	-	-	-	-
Chicago	-	-	-	-	-	-
Ill. Car & Mfg. Co.	-	-	-	-	-	-
Total This Mo.	3	-	25	-	-	28
Total to date	1626	440	638	887	-	3589
Total to be overhauled	77	5	1476	5	187	1750

BOX CARS

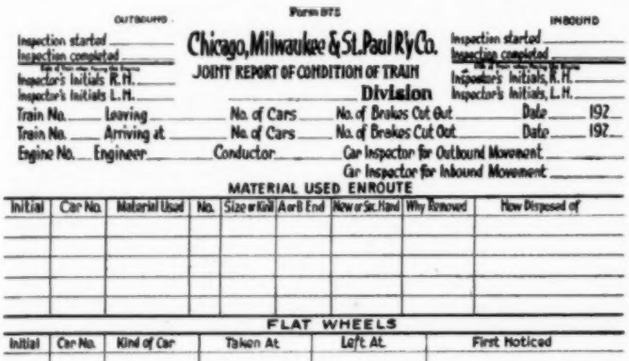
	40 ton box cars being converted to skeleton log flats at Tacoma.	40 ton box cars being converted to new ordinary log flats Milwaukee
No. of cars completed to December 1st.	200	192
No. remaining to convert	50	58
	250	250

Office of Master Car Builder

Fig. 2—Monthly Report of Schedule Repair Work by Stations

output is at the proper rate. It is possible to set up a definite output based on a specific number of men allotted for the work at each point and then keep a definite record of the work done so that the status of same may be known at all times. An illustration of the manner in which it is possible to follow the general work, based on other reports of greater detail and confined to location, is given in Figs. 1 and 2.

In any such plan there is, of course, a great deal of heavy work done in the nature of repairs in kind and in


Form BTS

OUTBOUND — INBOUND

Chicago, Milwaukee & St. Paul Ry Co.

JOINT REPORT OF CONDITION OF TRAIN

Division

Inspection started / Inspection completed / Inspector's Initials R.H. / Inspector's Initials L.H.

Train No. Leaving No. of Cars No. of Brakes Cut Out Date 192

Train No. Arriving at No. of Cars No. of Brakes Cut Out Date 192

Engine No. Engineer Conductor Car Inspector for Outbound Movement / Car Inspector for Inbound Movement

MATERIAL USED ENROUTE

Initial	Car No.	Material Used	No.	Size or Kind	A or B End	New or Sec. Hand	Why Removed	How Disposed of

FLAT WHEELS

Initial	Car No.	Kind of Car	Taken At	Left At	First Noticed

HOT BOXES

Initial	Car No.	Loaded or Empty	Weight of Load	Marked Capacity	Taken At	Left At	No. of Hot Boxes

GIVE INFORMATION OF ANY DEFECT AFFECTING SAFETY OR COMFORT OF PASSENGERS OR EMPLOYES

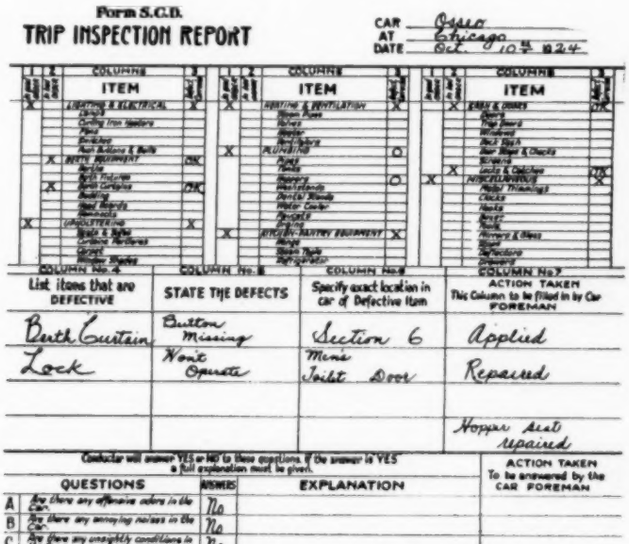
Initial	Car No.	

NOTE: This form to be considered part of the equipment of all trains. Car inspectors will hand two copies of the blank to outbound train conductors and will also pick them up from conductors at terminations of runs. Inspectors will enter the time when the inspection of train began and was completed at initial and final terminals and the number of brakes cut out at initial terminals. Conductors will fill out remainder of blank as required. Inspectors at final terminals will endorse the reports to show repairs made, and forward one copy to the Division Superintendent, retaining the other copy for file.

Fig. 3—Joint Inspector's and Conductor's Report of the Condition of Trains

many cases it can be determined by estimates before the work is done, whether or not it will constitute rebuilding as prescribed by an accounting method or will be considered as heavy repairs with certain charges to capital account for improvements. This is merely another expression of the fact that obsolescence is overcome to the degree that equipment when reinforced to meet present day strength requirements is accounted for in the books as new and the expected life cycle will be relatively extended. Freight car repairs, if carried on so as to give maximum car service at a minimum cost, usually result in dividing the work into two groups; that is, the repairs which must be made at certain frequent intervals to overcome wear of certain parts, and repairs which are naturally accumulated until the heavy repair cycle is at hand. All carriers renew, by force of circumstances, such items as wheels, axles, brake shoes, brasses, air-hose, couplers, etc., in their proper cycle between heavy repairs to the entire car. This is a natural sequence, if maximum service is to be obtained with a minimum repair cost and at the same time having the situation in control as to developments which require further improvements.

The turnover of equipment both in the matter of retirement, acquisition, rebuilding and heavy repair work is a very important feature in developing car repair programs and especially in determining the policy to be pursued after an analysis along this line has been made. For instance, the average age of equipment owned, while a vital factor in the proper knowledge of the repair situation, has not, for the most part, accurately reflected conditions as to requirements of policy with respect to physical factors on such roads as are subject to Interstate Commerce Commission accounting rules, as was the case prior to 1914. In that year the I. C. C. issued a classification of accounts, providing that the rebuilding of equipment in cases where the cost of the work constituted the major portion of the value be considered as renewed, and as this required calling equipment new under such circumstances, the life cycle was for this reason begun anew. This changed the situation considerably in the case of some administrations from their former practice, because prior to that time the life cycle of the car continued from the original date built regardless of the nature of the ensuing repairs or improvements and it was entirely optional with the owner whether or not it would be considered that cars were dismantled and used in building up new equipment or whether the original unit would be continued, as such, regardless of the work done. The requirements of the I. C. C. classification covering rebuilding made it possible for those who elected to do so to adopt a policy of refinancing and reconditioning equipment out of operating expenses in the first instance with a consequent adjustment of accounts and transfer of proper


Form S.C.D.

TRIP INSPECTION REPORT

CAR Ogeo
AT Chicago
DATE Oct 10 1924

COLUMN 1 ITEM — COLUMN 2 ITEM — COLUMN 3 ITEM

List items that are DEFECTIVE	STATE THE DEFECTS	Specify exact location in car of Defective Item	ACTION TAKEN This Column to be filled in by Car FOREMAN
Berth Curtain	Button Missing	Section 6	Applied
Lock	Won't Operate	Main Toilet Door	Repaired
			Hopper Seat repaired

Conductor will answer YES or NO to these questions. If the answer is YES a full explanation must be given.

	QUESTIONS	ANSWER	EXPLANATION	ACTION TAKEN To be answered by the CAR FOREMAN
A	Any there any offensive odors in the Car.	No		
B	Any there any annoying noises in the Car.	No		
C	Any there any unsightly conditions in the Car.	No		
D	Is there any other defect affecting the safety or comfort of Passengers or Employes.	No		
E	Is there an equipment missing that belongs to the Car.	Yes	Step Box	One Applied.

The Porter will sign below to indicate that he has inspected this car
SIGNATURE OF PORTER (F) J. White

The conductor will sign below to indicate that the conditions and requirements of this car are as above reported.
SIGNATURE OF CONDUCTOR (F) J. Blower

Fig. 4—Trip Inspection Report—Every Item Must Be Checked as Defective or in Good Order

charges to capital account, all of which has generally been affected by the operating ratio as a determining factor in the extent to which the rebuilding of equipment could be carried out. In recent years, however, it has been found that other administrations have been able to borrow money on the new valuation of rebuilt equipment because, presumably, they could not bear the operating charge in the first place, even though this would eventually be credited to operating expenses and charged to capital.

The extent to which rebuilding and heavy repair work is carried on is very important. Heavy repair work can be reduced to a formula so far as requirements are concerned when an analysis is made of equipment to determine

its physical characteristics on a broad scale and then set up the heavy repair cycles. These cycles run from 8 to 12 years, depending upon the characteristics of the equipment. If a carrier owning 100,000 cars has had a turnover of rebuilding and heavy repairs at the rate of 10,000 cars per year, then it is apparent that the general overhauling cycle runs about 10 years. A more detailed analysis will doubtless develop certain cars requiring renewal cycles of eight years, others considerably more than that. The idea here is that a close regulation of the nature of repairs and, therefore, the general maintenance cost will finally resolve itself down to what is now being done in the case of locomotives, where there is a constant analysis required to determine the proper balance between running and classified repairs based on many considerations, one of which might be pointed out here as being the miles run out and miles restored in classified repairs. In the case of freight cars, years might be substituted for miles, considering years run out and years restored in overhauling. Much can be done along the lines of determining frequency of heavy repairs in further detail by records showing how this is progressing by types or series of cars. Returning again to the example of a road having 100,000 units, it is possible to have a division as follows:

Cars		Age	
10,000	at	2 years	20,000
15,000	at	5 years	75,000
10,000	at	8 years	80,000
20,000	at	10 years	200,000
10,000	at	18 years	180,000
5,000	at	20 years	100,000
10,000	at	25 years	250,000
10,000	at	26 years	260 000
10,000	at	27 years	270,000
100,000			1,435,000

Average age, 14.35 years.

The policy of heavy repairs and rebuilding the past 10 years shows the average yearly number of cars so overhauled at 5,000 per year, or once every 20 years. The new program will require, after an analysis of equipment, an average of nine years between heavy work, so that the program will have to be increased to 11,111 cars per year, of which 5,000 will be rebuilt and thus renew the life cycle, and reduce the average age gradually to approximately 10 years, if the usual 20-year life is to be maintained.

But if an acquisition program is followed consistent with ownership, then there will be 5,000 cars retired and 5,000 new cars purchased, which will reduce the requirements for rebuilding to less than 11,111 cars, because of reducing the average age thereby. In the latter plan there will be an approach to the average age of 10 years, but further analysis will be required to determine the extent of heavy work to be done to prevent the overhauling of obsolete cars to maintain the proper ownership complement.

It may be of interest to note further that the extent to which this kind of work can be transferred to capital charges is not always simply governed by the physical valuation in relation to capital investment, but as before stated, by the operating ratio, which is another way of stating that the amount of property required to perform the service is not, in every instance, the only factor, but the density of traffic as a whole or the volume handled which justifies building up capital out of operating expenses on the one hand, and direct capital charges by means of acquisition of new equipment on the other hand. Factors of this nature must be known and analyzed if a further and proper regulation of equipment is to be had consistent with local conditions, and any study will reveal the fact that at the present time there appears to be some difference in policy between carriers in this respect. Therefore, it is not possible to express specifically a general plan for common use. This is one of the reasons why the situation is not yet propitious for the central control of all of the equipment in the country as a whole. Whether desirable or not, it will be many years before this problem can be fully solved and brought to a state of uniformity throughout the country. What makes this question of such great importance is that the maintenance of freight cars involves not only repairs, but includes charges for depreciation on the investment in existing cars and retirement charges (or deferred depreciation) involved in cars taken out of service. This is one of the cases in railway accounting where maintenance carries the burden of the investment, the only item eliminated being interest on investment, which is a fixed charge not included in maintenance.

While a schedule of improvements is an essential feature of any railroad policy in order to meet changing conditions in operation, there are other factors in the ordinary maintenance of equipment, such as painting programs, special attention to refrigerator equipment, repairs and inspection to permit selection of cars for specific loading, so that loads may move to destination without interruption, etc. In order to follow up a maintenance policy closely and have it regulated in accordance with what the revenues will permit, it is necessary to be able to decrease or increase special program work accordingly and also regulate other plans in maintenance policy such as inspection, light repairs, etc. [As an illustration of a rather close supervision of the various kinds of work at hand, Mr. Sillcox here presented quarterly freight and passenger car repair bulletins outlining the plan to be followed for three months and regulating the work to be done according to what conditions will permit.—EDITOR.]

Freight car inspection can be organized and classified so as to reduce the method of reporting thereof to a system rather complete in itself because carriers are not only concerned with their own repair policies, but must inspect both system and foreign cars for safe movement in trains whether the load originates on home or foreign lines.

There should be a clear understanding in the matter of inspection as to what it means to "bad order" cars, and have them switched to repair tracks in cases where it would be possible to make repairs in the train yard. Switching is expensive and should be conserved, even though it is not charged to freight car repairs. Much can be done to save this expense and expedite the movement if handled in train yards.

While all that has been said relates to action which may be taken by car department employees, the element of possible loss to the service from lack of attention in avoiding cases of rough handling, cornering of cars, failure to release air brakes in making stops prior to taking siding for an opposing train, resulting in pulling out drawbars, and delaying both movements, etc., such losses may be avoided by proper co-operation and adequate appreciation in working out a plan in any given instance, for it is evident to most car men that losses of this character occur too frequently and that they are not sufficiently enumerated. A poor crew can generally manage to set out a few cars each day or burn off a journal occasionally, while it takes a wide awake and experienced train crew to treat boxes in such a way as to bring all of their cars safely into the terminal or save fuel in seeing that side doors on box cars, when picked up, are properly closed, not leaving the job entirely up to the other fellow or even overstraining themselves in these acts of constructive helpfulness. Laxity in practice has resulted from technicalities being applied, such as car men being called, in many cases unnecessarily, to couple hose, incurring expense entirely out of proportion to the work thus performed and which, for the most part, seemingly could not have been originally anticipated or even implied in the formulation of schedule rules. I recall a condition resulting from orders being issued requiring car men to scrub out cabooses which resulted in the men involved seeking information as to the possibility of eventually being assigned to "redcap" duty in train yards.

While the thought expressed may seem remote, it clearly indicates the trend of mind on the part of car men who may be diligently applying their efforts in the interests of the service.

Figure 3 is a form suggested as a thought with the idea that it would be made out by the inspector, chief inspector, or foreman at No. 1 and No. 2 inspection points, already referred to, for each train departing from or passing through the station involved.

The object of the form is to guarantee the proper inspection and safe condition of cars, record of loose equipment and supplies in addition to obtaining the benefit of the train crews' experience while en route. Defects shown on this form should be properly corrected, the car inspector at the inbound station making certain that ample assistance has been provided to correct any of the defects reported by the conductor, so that it will not be necessary for him, in filling out this form for the outbound movement of the train, to include any of the defects previously reported. It is the practice to have this form made out in duplicate, and car inspectors, in the case of freight trains, place it in suitable boxes located on the ends of cabooses. There are two blanks with carbon paper between, all placed on a suitable board of the same dimensions as the report and held in place by a rubber band near the top.

In the case of passenger trains, the report is handed to the conductor. On arrival at an inbound station the car inspector meets the train and receives a form (Fig. 4), noting thereon the number of brakes cut out, and signs the report in the space provided. It is the practice at this time to note whether the brakes cut out have air brake defect cards attached. Inspectors also look over the report to see whether the conductors have reported any difficulty with the train while in their possession. If so the trouble is corrected immediately wherever possible. The original of the report is then forwarded to the division superintendent and the duplicate retained by the local car foreman in charge of the station at which the train arrives. These copies are kept in neat order so as to be readily accessible in the event it is desired to look up the record of any train arriving at the station. These reports are used on all divisions and cover the operation of a train from one terminal to the next. Where a train goes through several terminals, the car inspector arranges to supply new forms to the conductor taking charge of train leaving the station. In other words, the one form is not carried through from the originating station to the final terminal.

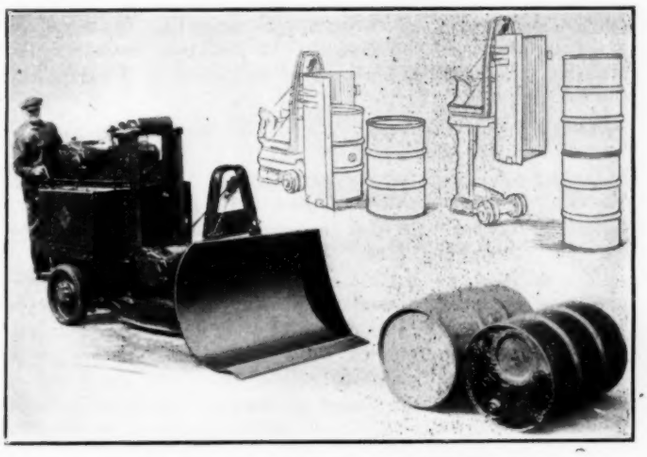
Special Passenger Car Inspection

Freight train inspection is vital to safe and prompt performance, while Fig. 4 shows a form for use in the matter of passenger cars covering apparently minor, but nevertheless, essential features. This form was devised to overcome the many annoyances experienced to a detailed nature due to conductors and porters claiming to have reported certain conditions which car men failed to correct. Such items as defective fixtures for lighting, berths, upholstering, heating, ventilating, plumbing, kitchen equipment, sash and doors and other minor features, observed by porters and conductors en route, are entered on this form for the attention of car men at terminals. This provides for the conductor making a report on the condition of cars in the train covering each item listed and showing whether in good or bad order by means of symbols. At the end of the run the conductor places two copies of this report in the switchboard locker door of the car where it is taken out by the car inspector. The car man then makes the necessary repairs and marks the items repaired as he goes along, this to insure having all work done as required, in addition to any which the car inspector himself may note. When the work is completed the car foreman places one copy properly marked in the switchboard locker door so that the conductor may review it and see that the work has been done before leaving on the next trip. If repairs are found to have been made, the conductor signs the report and forwards it to the superintendent of sleeping and dining car service. Where superior service is demanded this system usually results in proper care of the minor but noticeable items of defects. In addition, it gives a comparison of care in inspection between road and yard forces.

[The final installment of this paper will appear in an early issue of the *Railway Age*.—EDITOR.]

An Electric Elevator Stacking Truck

AN ELECTRIC elevator tractor for transporting and stacking bulky cylindrical and rectangular loads has recently been developed by the Elwell-Parker Electric Company of Cleveland, Ohio. This unit handles rolls of steel, barrels, bales, boxes, etc. The method of handling is ingenious, the tractor automatically picking up its load in any position and stacking it either vertically or horizontally as desired. The elevator raises the lower end of the load to an elevated position of 6 ft. Thus, material 6 ft. high can



Picking Up and Stacking Oil Drums

be stacked, end on end, to 12 ft. heights saving storage space and eliminating much double handling.

The unit consists of an elevator tractor with a revolving apron or cradle of a design such that the load may be picked up easily and carried without further attention in either a horizontal or vertical position. The load is raised or lowered by operating the elevating platform with which the unit is equipped while the cradle is revolved to any position from the horizontal to the vertical by means of an additional motor hoist. The two hoists for operating the elevator and revolving the cradle are standardized with interchangeable parts. All power for the equipment is supplied from one central storage battery carried in the battery compartment, with individual controllers for lifting, revolving and driving.

Two dual compensating wheels are used at the end nearest to the load, in order to secure a wider tread, improved stability and longer tire life. A number of additional safety devices have been installed in this equipment, of which the most important is an arrangement whereby the hoisting motor may be instantly stopped during lowering whenever there is a slackening of the elevating cable, due to the elevator striking an obstruction, etc. The equipment is operated by one man.

Control of Gulf Coast Lines Authorized

Large Part of Proposed Missouri Pacific System Now Under Single Control

WASHINGTON, D. C.

ACQUISITION by the Missouri Pacific of control of the Gulf Coast Lines, which earlier in the year had been authorized to acquire control of the International-Great Northern, was authorized by the Interstate Commerce Commission in a decision made public on December 10. This authorization brings under a single control a large part of proposed System No. 19 of the commission's tentative consolidation plan, built up around the Missouri Pacific, as the commission has already this year authorized the Missouri Pacific to acquire the Texas & Pacific, in addition to permitting it to acquire a half interest in the Denver & Rio Grande Western. The other half interest is with the Western Pacific, which, with the Denver & Rio Grande Western, were placed in the tentative plan in the Santa Fe system, so that the acquisitions authorized by the commission depart to that extent from its tentative plan, but its action is regarded as indicating a willingness on the part of the commission to encourage initiative on the part of the railroads to take voluntary steps in the direction of consolidation. The commission's tentative System No. 19, however, also includes the Chicago & Eastern Illinois, the Kansas City Southern, the Kansas City, Mexico & Orient, the Kansas, Oklahoma & Gulf, the Fort Smith & Western and the Louisiana & Arkansas.

The Missouri-Pacific-D. & R. G. W.-Western Pacific system thus built up will amount to over 15,000 miles of road, including 1,042 for the Western Pacific, 2,604 for the D. & R. G. W., 7,364 for the Missouri Pacific, 1,962 for the Texas & Pacific, 1,132 for the Gulf Coast Lines, and 1,159 for the International-Great Northern.

The decision, to which Commissioners Eastman, McManamy and Campbell dissented, also authorizes the Missouri Pacific to issue $18,000,000 of 15-year 7 per cent sinking-fund collateral trust notes, of which $4,500,000 are to be exchanged at par for outstanding 15-month notes issued in payment for 37,500 shares of stock of the New Orleans, Texas & Mexico at $120 per share and the balance to be used in the acquisition of additional shares. A supplemental order was also issued unconditionally authorizing the N. O. T. & M., to acquire control of the International-Great Northern, as the previous authorization was made contingent upon the commission's decision on the Missouri Pacific application. The commission indicates its disapproval of some aspects of the methods involved in the transaction, particularly relating to the compensation of the bankers, but gives its approval of the application in spite of them.

The applicant's system comprises 7,364.47 miles of track and extends from St. Louis westerly to Kansas City, Mo., Omaha, Neb., and Pueblo, Colo.; and southerly and southwesterly to Kinder, La., and Texarkana, Tex. At Alexandria, La., and Texarkana it connects with the Texas & Pacific Railway Company, which extends from New Orleans, La., to El Paso, Tex. The Texas company owns and operates 1,962.74 miles of railroad, and is controlled by the applicant through a majority stock ownership.

The New Orleans company, by ownership and trackage agreements, operates a railroad from New Orleans to the Sabine River. It controls, through stock ownership, the Beaumont, Sour Lake & Western, the St. Louis, Brownsville & Mexico, the Orange & Northwestern, the Houston & Brazos Valley, the New Iberia & Northern, and the San Benito & Rio Grande Valley, whose railroads extend generally from the Sabine River to Brownsville, Tex., and the Rio Grande valley. The railroads of the respective companies form one system, commonly known as the Gulf Coast Lines, and have an aggregate mileage of 1,132.79 miles, of which about 900 miles are owned and the rest is operated under trackage rights. The New Orleans company also owns a one-half interest in the Houston Belt & Terminal Railway Company and the International Bridge & Terminal Company.

Under an agreement made May 1, 1924, the applicant has purchased from W. A. Harriman & Co., Inc., and Blair & Co., Inc., 37,500 shares of the capital stock of the New Orleans company out of a total issue of 150,000 shares, at $120 a share. In consideration of such purchase the applicant obtained an option, expiring not later than January 15, 1925, to purchase from these banking companies 39,000 additional shares, and has agreed, in the event it shall exercise such option, to purchase all other capital stock of the New Orleans company acquired by the banking companies and tendered it to within 90 days after the exercise of the option. It would appear from the agreement between the applicant and the banking companies, the report of the commission says, that the applicant is limited, during the 90-day period, to the purchase of stock of the New Orleans company from the banking companies. The report continues:

On this basis the cost of the entire authorized capital stock would be $18,000,000. It is claimed that book value of the stock is $151 a share. We have not completed our valuation of the properties. On behalf of the applicant it is stated that the price is considered to be reasonable because of the earning capacity of the lines of the New Orleans company, the additional traffic to be secured, and the expectation that in the immediate future the new business to be developed in the territory will give the applicant an added revenue of not less than $3,000,000 annually. From January 1, 1920, to May 31, 1924, the net income of the New Orleans company available for corporate purposes was $8,787,311.62, and the income balance, after the payment of dividends averaging $786,723.06 a year, was $5,312,618.12, an average of $1,202,856.93 a year. These results indicate that the income balance during the above-named period, after the payment of fixed charges and dividends, equalled approximately 6.75 per cent on $18,000,000.

For the purpose of acquiring shares of the capital stock of the New Orleans company held by other persons, the banking companies have entered or will enter into agreements with stockholders under which the banking companies agree to purchase certain shares of the stock and are given the option, until January 15, 1925, to purchase additional shares, at the price of $114 per share, or as stated in the aforesaid agreements "$120 per share less 5 per cent profit to the Purchasers," payment in each instance to be in securities of the applicant received by the banking companies. There are other agreements, which are "Optional with Stockholder as to Signing," the purpose of which is to give to the banking companies the option of purchasing all, but not a part, of the applicant's securities that may be received by the stockholders in payment for the stock sold to the banking companies. In these last-named agreements the price fixed for the 15-month secured notes is 97½ and accrued interest and the price fixed for the proposed 15-year sinking-fund notes is 94 and accrued interest.

For services in connection with the negotiations resulting in the agreement of May 1, 1924, the applicant agreed to pay Kuhn, Loeb & Company a sum equal to 1¼ per cent of the face value of the securities that it may issue in acquiring capital stock of the New Orleans company. Upon the basis of the issue of $18,000,000 of proposed 15-year sinking-fund notes for all of the capital stock of the New Orleans company, namely, 150,000 shares, the agreed payment would amount to $225,000. It does not appear that the payment will be made by the applicant out of the proceeds of the securities issued.

The applicant represents that the proposed acquisition will be in the public interest because it will result in establishing a complete and well-rounded system connecting Omaha, Kansas City, and the Mississippi River gateways with the principal Texas cities, the Gulf ports and the Mexican border; that the proposed

system will be able to render better and more dependable service and to effect substantial economies in operation; that it will aid in the development of the Rio Grande valley and adjacent parts of southeast Texas, and of the Gulf ports, and will give to shippers served by the New Orleans and the International companies largely increased facilities for marketing their products. It is pointed out that the applicant's lines, excluding the railroad of the Texas company, do not reach any Gulf ports, and, in connection with the railroad of the Texas company, reach only New Orleans; that the lack of access to any seaboard, places the applicant at a disadvantage with strong competitors which reach the Gulf ports over owned or affiliated lines; and that while the applicant has been able to reach Houston and Galveston through its close relations with the International company, this relationship would be subject to termination at any time if control of the International company should be acquired by a competitor.

The consolidated balance sheet of the New Orleans company, and its subsidiaries, as of May 31, 1924, showed investment in road and equipment, $43,317,475.30; other investments, $2,533,010.08; current assets $5,793,081.61; deferred assets, $14,064.36; unadjusted debits $1,379,972.17; capital stock, $15,000,000; long-term debt, $23,222,903.27; current liabilities, $3,772,946.65; deferred liabilities, $818,767.43; unadjusted credits $2,967,320.08; profit-and-loss credit balance, $5,387,312.33; corporate surplus, $7,275,666.09. In 1923 railway operating revenues were $11,911,420.31; railway operating expenses $7,456,563.57; net railway operating income, $3,450,670.92. For the first six months of 1924 railway operating revenues were $7,258,246,08; railway operating expenses, $4,196,559.60; net railway operating income, $2,341,225.45.

Financing Plan

In carrying out the agreement of May 1, 1924, which was modified by a supplement dated May 19, 1924, the applicant is issued $4,500,000 of 15-month 7 per cent secured notes dated as of June 1, 1924, in payment for 37,500 shares of capital stock of the New Orleans company, the capital stock thus purchased being pledged as security for the notes under an indenture dated as of June 1, 1924, made by the applicant to the Irving Bank-Columbia Trust Company, trustee. These notes will mature September 1, 1925. By the terms of the notes and of the trust indenture under which they were issued the applicant may require the holders thereof to exchange them for notes of the proposed issue in like face amounts. It is proposed that $4,500,000 of the 15-year sinking-fund notes will be used in making such exchange.

To acquire the 39,000 additional shares of capital stock of the New Orleans company by the issue of $120, face amount, of notes for each $100, par value, of stock, will require $4,680,000 of the proposed 15-year sinking-fund notes. To acquire the remainder of the 150,000 shares of the capital stock of the New Orleans company, namely 73,500 shares, at the same ratio of notes for stock, will require $8,820,000 of the proposed 15-year sinking-fund notes. Whether the applicant will acquire all or only part of the 73,500 shares depends on the amount acquired by the two banking companies and tendered to the applicant within 90 days after the exercise of the option contained in the agreement of May 1, 1924, and on the amount acquired by direct purchase from the owners after expiration of the 90 days.

It is further provided by the agreement of May 1, 1924, that, prior to the acquisition by the applicant of the 39,000 shares of stock in pursuance of the option contained in that agreement, the directors of the New Orleans company might declare, in addition to current dividends at the rate of 7 per cent per annum, an extra dividend at the rate of 16½ per cent upon the outstanding stock. Such an extra dividend, amounting to $2,447,428.50, was declared on May 19, 1924, payable in installments on June 2, September 1, and December 1, 1924.

The applicant contemplates issuing the proposed 15-year sinking-fund notes under an indenture also dated as of June 1, 1924, and made to the Irving Bank-Columbia Trust Company. It is provided that in connection with the issue of the notes the capital stock acquired shall be pledged under the indenture. The 15-year sinking-fund notes to be issued under the indenture will be dated as of June 1, 1924, and will be payable June 1, 1939, with interest at the rate of 7 per cent. There is a provision in the indenture for the creation of a sinking fund, under which substantially one-fifteenth of the notes will be retired annually, beginning on or before September 1, 1925.

So long as there is no default under the indenture securing the proposed 15-year sinking-fund notes, the applicant is to be entitled to receive all dividends payable on the stock pledged thereunder, except stock dividend or any extraordinary dividends payable in stock bonds, or other securities, and is to have the right to vote the pledged stock, the proxies to be given the applicant by the trustee under the indenture to contain a provision that the holder thereof shall have no right to vote for or consent to anything inconsistent with the provisions of the indenture. There are other provisions in the indenture having for their purpose the protection, preservation, and maintenance of the security behind the proposed 15-year sinking-fund notes.

It is represented on behalf of the applicant that the properties of the New Orleans company operated in connection with the property of the applicant will have a substantial value in addition to the value of the assets represented by the capital stock to be acquired; in other words, that the properties of the New Orleans company are of more value when operated in connection with the property of the applicant than when operated independently of that connection. It is also represented that, based on the earnings from the properties of the New Orleans company for the calendar year 1923 and on the estimated earnings for the calendar year 1924, the applicant has the reasonable expectation of receiving as income upon the capital stock to be acquired amounts approximately equivalent to the annual interest charges and sinking-fund requirements of the proposed 15 year sinking fund notes.

The applicant's proposed system will provide the shortest route from Brownsville, Houston, and Galveston to St. Louis, Chicago, and various eastern points. It will open to the rapidly developing citrus fruit and vegetable traffic of the Rio Grande valley more gateways over a one-line haul than any other system, and will give to the grain growers of Nebraska and Kansas a new competitive one-line haul to Gulf ports. The applicant controls the American Refrigerator Transit Company, which owns 7,500 refrigerator cars and has authorized the purchase of 2,000 more. It appears that traffic from territory served by the New Orleans company reaches its peak in the early months of the year, when traffic shipped in refrigerator cars is light on the applicant's system. Apparently the applicant would be able to supply refrigerator equipment for the expeditious movement of perishable products from the Rio Grande valley. It is expected that large economies will be effected in overhead and operating expenses, and that the movement of traffic will be expedited by eliminating interchanges. Control of the International company will insure the maintenance of the through route from St. Louis to Laredo, which has been established for more than 40 years. The proposed acquisition is in accord with our tentative plan for the consolidation of railroads, as the lines of the applicant, the New Orleans company, and its subsidiaries, and the International company are included in System No. 19.

Bankers' Compensation Criticized

There are certain aspects of the method by which it is proposed that the applicant shall acquire the stock in question which are so unfortunate as to cause hesitancy in giving approval to the acquisition of the stock involved on the terms proposed. Our approval of the application is in spite of those aspects. To deny approval because of objectionable features which seemingly can not be eliminated, would prevent the applicant from acquiring the stock in question at a price which, in spite of the expenses incident to its purchase, makes the acquisition of advantage to the applicant. It is evident that in one way or another the bankers who, on the one hand, on behalf of the stockholders, render services to bring about a sale to the applicant in the interest of the stockholders, and on the other hand, render services to the applicant in order to induce the owners of such stock to make the sale, are to receive compensation or profit on the transaction in an amount apparently in excess of $1,000,000. It has been represented to us that the stockholders desire to sell and the applicant desires to purchase. The warrant under such circumstances for the interposition of the activity of bankers at the vast expense mentioned to the parties served is not clear. The applicant having determined that it is wise for it to purchase the stock in question and that it is willing to pay therefor $120 per share, it has the right, if and when authorized by us, to purchase the stock as reasonably as it can as long as it acts in good faith and resorts to no improper means. A willingness on the part of the applicant to pay to the stockholders $114 per share, which was substantially above the market, shields the applicant from any charge of seeking to acquire the stock for less than its fair value. Under these circumstances the applicant is entitled to adopt such procedure in making the purchase as would not enhance its market price and make it difficult or impossible to procure the stock. In its own interest it was entitled to limit its payment to stockholders at $114 per share. In order to bring about sales at that price it was proper for the applicant to stay out of the market and employ the services of others to acquire the stock and to pay proper compensation for such services. It would appear that to pay $6 per share for such services, plus $225,000 in connection with the transaction to its own bankers, was excessive compensation for such services. Nor, regarding the bankers as acting for the applicant, was there any reason for the applicant to agree that it would not purchase except through the bankers. This provision suggests acquiescence by the applicant in an endeavor by the bankers who receive the $6 per share to force payment to them by the stockholders in order that the stockholders might have the benefit of a sale at $114 per share, rather than at the market price. It is to be noted that the two of the banking firms which receive the compensation of $6 per share acted not for the applicant, but for the stockholders or in their own behalf as dealers. It has been urged upon us that the bankers were entitled to such sum because

of the value to the stockholders of their services rendered over a period of years, culminating in their successful sale of the stock. The fact that the bankers believe themselves to be entitled to this compensation from the stockholders is their apparent reason for giving the transaction such form as practically to compel the stockholders to pay that compensation. As already noted, the explanation of the payment of the sum of $225,000 to the other firm of bankers is that it was justified in order to induce the representatives of the stockholders to make the sale. Whatever may be said of the right of the bankers to demand these large sums, it would appear that the applicant, in order to acquire the stock, was required to pay them. Under these circumstances, and because in any event the purchase by the applicant at a price not exceeding $120 per share appears to be warranted, we approve it.

We have no jurisdiction to determine the compensation which the bankers should receive but deem it our duty to call attention to the aspects which we have mentioned.

Eastman, *commissioner,* dissenting:

Whether or not this transaction is one which we may lawfully approve under the provisions of paragraph (2) of section 5 of the interstate commerce act, it is, in my opinion, a transaction which is inconsistent with subsequent provisions of the same section and one which, for that reason if for no other, we ought not now to approve. I refer to the paragraphs of section 5 which require us to prepare and adopt a plan for the consolidation of the railway properties of the continental United States into a limited number of systems, and which provide thereafter for the approval of consolidations in harmony with that plan.

The majority are here authorizing the Missouri Pacific to acquire control of the Gulf Coast Lines and of the International-Great Northern. These are all large railroad properties. When once they are brought under common control they will become parts of one railroad system, and that system will not thereafter be broken up, regardless of what our consolidation plan may contemplate unless the Missouri Pacific wishes it to be broken up or becomes insolvent. It was not, in my judgment, the intent of Congress, however wise or unwise that intent may have been, that we should permit such great combinations of railroad properties to be brought about prior to the promulgation of our consolidation plan. It may well be that when we come to adopt that plan it will be found necessary, in obedience to the very definite and specific mandates, to assign either the Gulf Coast Lines or the International-Great Northern to some other railroad than the Missouri Pacific. I refer to the mandates which require us to preserve competition as fully as possible, to maintain existing routes and channels of trade and commerce wherever practicable, and to arrange the several systems so that they may employ uniform rates and under efficient management earn substantially the same rate of return upon the value of their respective railway properties..

Commissioner Eastman, in his dissenting report to which Commissioner McManamy subscribed, objected to the granting of the application both on the ground that it was not the intent of Congress that the commission should permit "such great combinations of railroad properties to be brought about prior to the promulgation of our consolidation plan" and also because of the compensation of the bankers and the substitution of notes for stock. Commissioner Campbell also objected to the bankers' compensation.

Railway Business Association Annual Dinner

Speakers Emphasize That Railway Problem Is by No Means Entirely Solved by Recent Election

The Railway Business Association annual dinner at the Hotel Commodore, New York, on Thursday evening, was attended by about 1,500 leaders of the railway and railway supply industry. There were three speakers: Hon. Selden P. Spencer, United States Senator for Missouri; Samuel O. Dunn, editor of the *Railway Age,* and James A. Emery, council of the National Association of Manufacturers.

That the railways will be called upon to handle in 1925 the largest increase in freight business that has occurred in any year since 1916 was the view of Mr. Dunn, who indicated the need of new capital to provide required facilities. Both Mr. Dunn and Mr. Emery referred to the recent Presidential election and pointed out the favorable factors resulting therefrom. Both agreed, however, that the railway problem was by no means solved by the election alone although it had proved that the voters were sound on transportation problems. The railways would need to continue to keep their case before the public and should essay, as Mr. Dunn put it, to keep the railways popular. Mr. Emery discussed at some length the Shippers Regional Advisory Boards and pointed out the value of the co-operation permitted between railways and shippers.

In the morning prior to the dinner there was a business meeting. Resolutions giving the views of the Association on current railway developments were adopted. These will be published in next week's issue of the *Railway Age.*

Abstracts of Mr. Dunn's and Mr. Emery's papers follow:

Business in 1925 Will Tax Railway Capacity

By Samuel O. Dunn
Editor of the *Railway Age*

It was, I believe, at the first dinner of the Railway Business Association that Judge Martin A. Knapp, then chairman of the Interstate Commerce Commission, began a speech by addressing this organization as "The Society for the Prevention of Cruelty to Railroads." The railways since then have suffered much cruel treatment, but this inhumanity is being mitigated, and that this is true is largely due to the long years of strenuous work of the Railway Business Association in helping to educate the public and governmental authorities regarding railway affairs.

We shall soon enter a new year which may prove to be one of the most important in the history of American railroads. I have written and spoken so much about railroad matters that there seems to be nothing new I can say about them without invading the field of prophecy. I am therefore going to venture into that field. The prediction I make is that the railways will have to handle in 1925, a larger increase in freight business than in any single year since 1916. A large increase in freight business should result in a substantial increase in net operating income. This, in turn, should make it possible for railway managements to raise new capital with which to finance additions and improvements on a larger scale than for many years.

If, however, 1925 is marked by a large increase in business the managements of the railways will have to face problems of great importance and difficulty.

After the ballots had been counted there were heard and published in many places comments to the effect that the result of the recent election had practically settled the railroad question. That question was involved in the national political campaign in two forms. The La Follette-Wheeler third party movement interjected the issue of government ownership. Beyond doubt the outcome showed that an overwhelming majority of the people are opposed to government ownership.

There were also proposed and advocated, not only by the supporters of the third party movement, but also by public men of other political faiths, certain changes in our national policy of regulation of railways.

Has the Railway Question Been Settled?

Some commentators upon the election have gone so far as to say that it was the expression of an overwhelming majority of the people in favor of the maintenance intact of the Transportation Act. No doubt the people did mean to declare themselves in favor of a fair and constructive policy of regulation. But it is only the part of wisdom to consider squarely what exactly the people did mean. If we do that we must admit that among the millions who crowded the polling booths to register unmistakably their opposition to government ownership and other radical proposals, there was by no means unity of sentiment regarding what constitutes a fair and constructive policy of regulation of railways. We must be prepared for disappointing manifestations of public sentiment. We must be prepared for unexpected and novel proposals regarding regulation, and we need not be surprised if some of these come from men, or groups of men, who have outspokenly opposed government ownership. The managers of the railways must be prepared to meet these developments by rendering to the public the best and most economical service practicable. They must be prepared to meet them by presenting to public authorities and the public facts and reasoning regarding railway affairs which will constitute conclusive arguments against unsound proposals.

Now, we would be deceiving ourselves if we should proceed even for a short time upon the assumption that these things are going to be easy to do.

Prospective Increase of Business

Let us consider for a moment the situation with respect to the handling of freight with which the railways may be confronted. They have to their credit in the record of the last two years memorable achievements in the handling of freight business. But these achievements have consisted of improvements in the service rendered. They have not included achievements in the handling of a largely increased traffic. On the contrary, since the depression which began in the latter part of 1920 railway freight business has been almost in a state of arrested development. In the fifteen years ending with 1920 the average annual increase in the number of tons carried one mile was 8 per cent. The freight business of 1923 exceeded that of 1920, but the increase in the three years was less than 1 per cent, and the business of 1924 has been smaller than that of 1923. I will state the facts in another way. In the fifteen years ending with 1920 the average annual increase in freight business was 15 billion tons carried one mile. In the three years ending with 1923 the average annual increase in freight business was only one billion tons carried one mile.

Possibly freight business will not hereafter grow as fast as formerly. We are logically justified, however, in using the experience of periods we have only recently passed through in forming judgments regarding the developments that will occur in the years immediately ahead of us. Now, our experience during the last quarter century and the conditions at present existing seem to warrant certain conclusions regarding railroad freight business during the next few years.

In the first place, our freight business has in the past over periods of years increased three and one-half times as fast as our population. This has, of course, been due to the rapid increase in our production and consumption per capita. There is no reason at present for doubting that our production and consumption per capita will continue to increase in future as they have in the past.

Secondly, there has been a substantial increase of freight business in the latter part of this year; and in the past an increase in business in the latter part of a year almost invariably has been followed by a record-breaking business in the next year, and usually has been followed by a record-breaking business for some years.

Third, the temporary increase of business in 1923 undoubtedly was halted largely by abnormal relationships which still existed between the prices of commodities, and especially between the prices of most farm products and other commodities. Even in 1923 the purchasing power of many farm products, and particularly those of the west, was, measured in the prices of other commodities, abnormally low. The farmers raising these products constitute a very large part of the population of the country. Until their purchasing power was restored there could be no lasting general prosperity.

Within the last six months the increase in the prices of certain farm products has been so great that as a whole farm products now have from 90 to 100 per cent as much purchasing power in other commodities as they had before the war. The increased purchasing power this has given to the farmers must have a favorable effect upon production and commerce in general. A similar revival of agriculture after the panic of 1893 and the election of 1896 was followed by an increase in freight business in every year for ten years.

Finally, the approach of a great increase of general business and of railway freight business seems to be presaged by the recent large advance in the stock exchange prices of railroad and industrial securities.

There has never been within the last quarter century a year of record breaking freight business, except 1923, when freight business was less than 15 per cent greater than it was five years before; and the increases in five year periods usually have ranged from 30 to 50 per cent.

Let us be conservative and assume that the business in 1925 will be only 15 per cent greater than in 1920, which would be 14 per cent greater than in 1923. How much of an increase in capacity over 1920 is it reasonable to conclude the railways would require in order to handle satisfactorily such an increase of business in 1925?

Needed Increase of Railway Capacity

We have no really tangible and definite measures of the increases in railway capacity except the increases in the tractive power of locomotives and the tonnage capacity of freight cars.

The experience of the last quarter century indicates that for the railways to handle in 1925 a freight business 15 per cent greater than that of 1920 they will require at least 12 per cent more locomotive tractive power than they had in 1920. Now, it is well known that the railways within the last two years have put in service large numbers of improved locomotives of great tractive power and many thousands of freight cars of large capacity. It is not so well known that for a long period during the war years and subsequently the numbers of locomotives and cars installed and retired were abnormally small, and that in consequence within the last two years unprecedentedly large numbers of locomotives and cars have had to be retired.

Calculations based upon the latest information available indicate that the railways now have 10½ per cent more trac-

tive power than they had in 1920. This indicates that they have only 1½ per cent less power available than they may need in 1925—a figure so small it might be construed to show that they will have no difficulty in providing sufficient power.

But let us see what the figure actually does mean. To effect this needed increase in tractive power it would be necessary to increase the present equipment by about 900 locomotives of the average capacity of those now in service. This would, of course, be in addition to the locomotives that would have to be retired and retirements during the last ten years have exceeded 1,800 a year. It will be seen, therefore, that there is indicated the need for the installation of at least 2,500 to 2,700 new locomotives within the next year, which is 400 to 600 more than the average number installed annually during the last ten years.

The experience of the last quarter century also indicates that to handle in 1925, 15 per cent more freight business than in 1920, the railways will need nine per cent more freight car capacity than they had in 1920. Calculations based upon the latest information available indicate that the total capacity of freight cars is now 5.6 per cent greater than it was at the end of 1920, or 3.4 per cent less than what will be required in 1925. To supply this additional freight car capacity would require an increase of about 85,000 in the number of freight cars of the present average capacity, and since the average number of cars retired during the last ten years has averaged about 100,000 a year, this would indicate the need for the installation in service of about 185,000 new freight cars next year. This would be about the number actually installed in 1923, but it would exceed the average number installed annually during the last ten years by more than 80,000. If these estimates are erroneous it is probable they err in being too conservative.

It is hardly necessary to add that increases in the total tractive power of locomotives and the total capacity of freight cars must be accompanied by corresponding improvement and expansion of all other railway facilities; and the available information indicates that the expansion and improvement of other facilities has been less within recent years than the expansion and improvement of equipment. This has been due to the financial situation of most railways. The purchase of equipment can be financed by the issuance of equipment trust notes which are a direct lien upon the equipment bought; but most other additions and improvements must be financed by the sale of bonds or stocks.

Now, for reasons which are well-known, to issue equipment trust issues and acquire equipment has been possible for many roads which could not possibly sell bonds or stocks to finance other additions and improvements. The conclusion that many roads, if a large increase in business comes, may find themselves provided with sufficient equipment, but unable, because of lack of other facilities, to utilize it efficiently, is as ominous as it is obvious.

If the facts and conditions that have been mentioned indicate anything it is that the increased freight business which is in prospect will tax the capacity of the railroads to the utmost. The railways must go on making even greater improvements in and additions to their properties and investing even more new capital for these purposes than they have within the last two years. It seems entirely probable that the new capital required by them will continue at least for some time to exceed one billion dollars annually.

They must also go on increasing the efficiency of operation as they have been increasing it. And they must secure even greater co-operation from shippers in the placing, moving and heavy loading of cars than they have been securing recently. Fortunately, the means of securing such co-operation from shippers already have been created. One of the most important and constructive steps affecting railroad transportation ever taken has been the organization since the railways were returned to private operation of Regional Shippers' Advisory Boards throughout the country to co-operate with the railways in the solution of problems which concern equally the shippers and the railways.

There is no reason for serious apprehension lest the purely transportation problems presented by a large increase in freight business will not in time be satisfactorily solved, provided a fair and constructive policy of railway regulation is followed by the authorities of government. The managers of the railways are fully and keenly aware of the necessity of enlarging the capacity of the railroad plant. They are fully aware of the necessity of adopting every possible improvement in operating methods. There can be no doubt of the willingness of shippers to co-operate in securing more prompt movement of cars, and there can be as little doubt of their willingness to increase the average loading of cars, which is greatly needed, if the reasons why it is needed are adequately presented to them. It is not at all improbable that we shall again have "car shortages," but they need not be serious or of long duration, provided a constructive policy of regulation is followed.

More Net Operating Income Vitally Needed

When, however, we turn to the question of how the railways will be regulated we face a question which is much more doubtful and which, in view of past experience, is adapted to inspire misgivings. A large increase in traffic will result, temporarily at least, in a large increase in the net operating income earned. Now, a large and permanent increase in net operating income is vitally necessary to the railway system of the United States. At least 95 per cent of all the new capital that has been invested in the railroads since they were returned to private operation has been raised by the sale of bonds and equipment trust notes representing increases in indebtedness. A prolonged continuance of this practice of raising practically all new capital by increasing railroad indebtedness would lead to the bankruptcy of most of our railroads. It has been necessary to make improvements and additions with borrowed money, if they were to be made at all, because extremely few railroads have been able for years to sell stock. A very large majority have been unable to sell stock because their annual net income available for paying dividends has been much too small. That condition can be remedied only by an increase in the net operating income earned.

The large investment which has been made in railway property within the last two years has been made, not because the net return that has been earned has been sufficient to justify it, for it has not been, but in the faith that with the return of normal business conditions the governmental regulating authorities would carry out the rate-making provisions of the Transportation Act according to their letter and spirit, and that then the railways would earn a return which would be sufficient to pay their fixed charges and also dividends upon their stock which would restore railway stocks to the high position in the favor of investors which they held 15 to 20 years ago before railway regulation became excessively restrictive.

It is not necessary, however, to tell those composing an audience such as this that for over 20 years every substantial increase in the net return earned by the railroads immediately has started movements of two kinds. These have been movements for advances in wages and reductions of rates. There is no reason for expecting that history will not continue to repeat itself. In fact, although the needed increase in the net return earned has only begun there are already on foot movements for both advances in wages and reductions of rates. They may be as yet only clouds upon the horizon not much larger than a man's hand; but to hope that these clouds will not grow would be, in view of past experience, the hope of folly.

Fair Treatment of the Public

How are these demands for changes which would adversely affect the net return earned by the railways to be met, as in time they undoubtedly must be met? First, they should be met with public spirit, fairness and reason. The railways are asking for fair treatment from the public. Those who ask fair treatment should give fair treatment. They are asking for fair treatment upon the ground that it is in the public's interest for it to give them fair treatment. The first requisite to convincing the public that the railways are sincere is for them to give to it the kind of treatment for which they ask.

The railways defend the rate-making provisions of the Transportation Act and ask that they be retained. These provisions make the right of the railways to earn a fair return contingent upon their being honestly, economically and efficiently managed. Now, of course, that kind of management includes the rendering of the best and most adequate service practicable, but it includes more than that. It includes, for example, reasonable economy in maintenance expenditures. The prediction has been repeatedly made that the railways will never make substantial payments to the Interstate Commerce Commission under the recapture clause, because, as has been predicted, they will make such large expenditures for maintenance when business and earnings are good as largely to defeat the purpose of that clause. It is hardly necessary to say that the adoption of any such policy would be in direct contravention of the rate-making provisions, and that no better policy for the purpose of inviting just attacks upon railway management and getting all the railways into trouble could be adopted.

Demands for changes in wages, working conditions and rates should be met in a spirit of openmindedness and fairness and dealt with in accordance with the existing and prospective conditions. Many controversies have arisen in the past between the employees and the railways, and the shippers and the railways, and have led to serious trouble, which might have been settled without serious trouble if the two parties had entered negotiations regarding them in a spirit of conciliation and fairness.

The employees and shippers are both parts, and important parts, of that great whole which constitutes the public. The future of the railways is in the hands of the public. We do not want more government in the railroad business in this country. But the government and the public are different entities, and we do want and must have more "public" in the railroad industry. An officer of one of our large railroad systems, in speaking against government ownership, called attention recently to the fact that we already have "public ownership" of railroads because the ownership of railroad securities is widely distributed among the people who constitute the public. In the sense in which he used the word, there is need for still more "public ownership" of railroads. Our railroads might well follow the example of many leading public utility companies in trying to increase the number of stockholders among their customers.

We do not want government management of railroads, but we want more public management of railroads in the sense that the more people there are who own their stock the more people there will be who will have a voice in their management; and we also need more public management in the sense that employees and the people generally should be made to know better the facts about the business and that the views and wishes of employees, shippers and travellers should be made better known to railway officers and should exert a greater influence upon railroad management.

Unfair Demands Should Be Firmly Resisted

But while the demands which will be made upon the railways in respect to service, wages, rates and other matters should be met patiently, fairly and reasonably, they should and must be met also with firmness and courage. If the railways of this country are to be successfully developed and managed under private ownership, they must not be subjected to unreasonable burdens, whether in the form of excessive wages, excessive taxes or in any other form, and they must be allowed to earn a net return which will be sufficient to enable them to raise adequate capital. Reasonableness and fairness do not include abject surrender to unreasonable and unfair demands or to unreasonable and unfair regulation. On the contrary, they include fighting in the last ditch for every important legal right and against every policy that tends unduly to restrict the initiative and freedom of the managements or to prevent the railways from earning the net returns which the economic welfare of the country demands that they shall earn.

For over four years there have been in existence rulings of the Interstate Commerce Commission to the effect that the railways are entitled to earn an average annual return of at least 5¾ per cent upon a fair valuation. These rulings have been virtually dead letters. During this time the railways actually have earned only about two-thirds as much return as the commission has held they are entitled to. There may be some defense for that kind of regulation in the past, but there cannot be offered any good defense of a continuance of it. A continuance of it would be confiscation under the guise of regulation. Until the railways for a period of years have earned an average return at least equal to that to which the commission has held they are entitled, there should be offered the most determined resistance to all changes in wages or rates which will even tend to make it impossible for the railways to earn at least this amount of return.

Can such resistance to unreasonable demands be made successful? I believe it can be. I also believe, however, that it cannot be made successful unless all those who want to see the railway system of this country develop and prosper under private ownership, and who know what is necessary to make it develop and prosper, will, in their own several ways, carry on an intelligent and tireless campaign of public education regarding railway matters and railway questions.

Past experience should be sufficient to teach that the work that needs to be done is not half done when governmental authorities have been informed and convinced regarding such matters. The public must be kept informed and convinced.

Education of Public Sentiment

Surely, past experience should be sufficient to warn even the most optimistically-inclined that the railroad question will never be settled and kept settled unless those who want a fair and constructive policy of regulation are prepared constantly and everlasting to present to the public the facts and the reasoning which constitute the case for a sound and constructive policy of regulation.

The business and railroad interests of the nation within recent years have become more articulate. The policy of telling the public the facts about big business, how it is managed, what it does for the public and why in the public interest it must be allowed to earn reasonable profits has been widely adopted. Statesmanship consists in the possession and use of the genius not only of formulating sound policies, but also of so forming and leading public sentiment as to get them adopted and carried out. It is as essential in the affairs of such an industry as that of the railroads, which are subject to government regulation, as in the affairs of government. Because of their very nature the railways always will be subject to criticisms and attacks from many persons who desire to gain public favor. They will always be the subject of proposed governmental interference and action. Their regulation by the government, if it is to be sound and constructive, will always require the exercise of high statesmanship by public men and regulating authorities, but it will require also

the exercise of equally high statesmanship by railway managers in co-operating with and helping to guide the statesmanship of public men.

Fortunately, a large part of the present managers of the railways have recognized this fact and recently have been devoting much of their thought and energies to the tasks, not only of railroad development and operation, but also of railroad statesmanship.

Railways May Have Popularity and Prosperity

The change that has been made in the policy of many railroads and other concerns has been brought about by adversity. Many business men have not yet learned, but many others have learned through the uses of adversity, what may be gained by taking the public into confidence and even partnership, and showing it what makes the wheels of business go round and what stops them.

It is, however, an old adage that when prosperity returns the lessons learned from adversity often are forgotten. And when that happens it is not long until adversity again comes knocking at the door. If the lessons that have been learned in the long period of adversity through which our railways have been passing are not forgotten when prosperity begins to return, there will be no good reason why the railways shall not enjoy a long period of prosperity. They deserve to prosper, they deserve to be popular, because nowhere on earth are there any concerns which in most respects are better managed, or which are contributing more to increasing the wealth, the incomes and the well-being of all classes of the people, or getting less return for their security-owners for what they do. It is easily within the power of those who finance and manage the railways—and I include those who finance them because they have been largely responsible for the past adversity of the railways and by the same token can contribute largely to their future success and prosperity—to so learn and utilize the lessons that the history of recent years plainly teaches us as to make the railways the most popular business institutions in this country and their securities the premier investment of the world in point of the certainty of return which is far more valuable than mere speculative possibilities. But these things cannot be done without great study and effort and perseverance in well doing. They cannot be done without good management and that includes soundness in financial management as well as in other respects. The "wolves of Wall Street," as they are called in the west, have in the past done the railways as much harm as the wolves of politics. They have, in fact, by the excessive capitalization and the manipulation of the securities of a comparatively few railway systems, furnished the wolves of politics the air which for many years they have been able to howl most musically and effectively through the public's loud speaker.

The railways cannot be made and kept popular and prosperous as they should be without a frank and full and unfaltering recognition by railway financiers and managers of the fact that in an industry which is subject to government regulation no management is good which does not include fair treatment of the public in every respect and the use of all legitimate means to convince the public and keep it convinced that it is being well and fairly treated.

Voters Sound on Transportation Overtures

By James A. Emery
Counsel, National Association of Manufacturers

The administrators, ministers and students of transportation gather under circumstances exciting reflective satisfaction. The contemporaneous rejection of radicalism by the English-speaking people is no accident. It bears all the characteristics of mental recovery following demoralizing reaction to the shock that rocked civilization. It marks a return from chimeras to realities. It indicates that in both countries painful experience and enlightening discussion convinced an overwhelming portion of the electorate that sincere radicals are not always intelligent, nor intelligent radicals always sincere.

But the verdict is cause for relief rather than complacency, particularly in the field of transportation. We still confront its real and enduring problems. But at least we continue the study more normally minded. Political sanitation has made marked progress. The threatening ravages of economic contagion have been checked and sharply localized; pink pills for a pale nation examined and declined. The new eclectic school opened with enthusiasm is abandoned in silence while the certificates of its founders are threatened with cancellation by suddenly courageous practitioners of the regular course.

Party Responsibility

We may fairly interpret the November verdict as an encouraging tendency to turn from legislative blocs, groups, or classes, however plausible in purpose, to a representative Congress with a working party majority led by a responsible executive. We have decisively rejected the definite suggestion of an omnipotent legislature and reaffirmed our faith in the limitations of a written Constitution judicially interpreted and enforced in every conflict between the asserted rights of the individual and the alleged authority of our political agencies. Throughout the states every serious proposal for organic change, enlarged with public authority, or radical experiment was sharply rejected.

Emphatically declining to empower the federal legislature to take plenary and exclusive control of the occupational life of all under 18, Massachusetts reasserted the traditional American doctrine of community responsibility for the reform of local conditions through local regulation resting upon local opinion.

Realizing the best of institutions depend for their successful operation upon the quality of their human administrator, the people, without regard to party, expressed their overwhelming confidence in an executive that personified the traditional and practical qualities of American individualism.

Repulsed, Not Defeated

But let no one be deceived. Revolutionary innovation and the determination to enlarge the governmental control of life is repulsed, not defeated. The partnership of formal socialism and radical suggestion save to unify American opinion. The very nature of the threat to cherished institutions stirred a new appreciation of their significance and rallied a color guard at their base. But even the armies of error must be met in new fields, and old truths be learned again in a changing day. But the immediate argument proceeds with new hope and unmistakable determination. Every circumstance of the recent election indicates a return to the major premises of American life.

Voters Sound on Transportation

Nor were pending issues of transportation untouched by the November verdict. The most persuasive and persistent proponent of more restrictive railroad regulation or public

operation urged his proposals under the most favorable conditions to a national audience. One hundred ninety members of Congress who recorded their opposition to the Howell-Barkley Bill proposing the abolition of the Railroad Labor Board and the substitution therefor of the personal plan of the Railroad Labor organizations, were officially blacklisted by the powerful group whose designs they obstructed. One hundred seventy were re-elected. Twenty who declined renomination for various reasons are succeeded by men of similar viewpoint. The remainder retired under varying circumstances which in no instance are attributable to the political anathema. The casualties, however, among supporters of the proposal suggest the familiar prayer for delivery from friends.

The best assurance of sound public policy is informed opinion. Extraordinary improvement in the operating efficiency of the American Railroad system, particularly during the past two years, is a fact too perceptible to escape public notice. The determination of the carriers to imperil their credit to assure the facilities for adequate service made a permanent and favorable impression on the public mind, while the fact that improvement grows as government administration recedes is not a lost lesson. Every improvement in working relations of railroad management and those whom they serve makes less necessary the intervention of government.

Shippers' Co-operation

Tonight we stand in the presence of the most significant working experiment in practical co-operation between shipper and carrier in the history of transportation.

In the Northwest, the Mid-west, the Southeast and Southwest, in the valley of the Ohio, the Great Lakes, through the Atlantic states, Central West, over Missouri and beyond Kansas and spreading over the Pacific slope, ten regional advisory boards composed of 5500 leaders in agriculture, commerce and industry, the free selection of their fellow shippers, because of superior knowledge, experience and character, are organized to study, analyze, estimate, and anticipate in continuing co-operation with corresponding committees of railway traffic officials the requirements of each locality in terms of its own production and distribution and its relation to adjacent territories. No railroad official is a member of these boards or votes on their conclusions. They represent experts selected by the shipping public, organized into commodity committees, masters of the facts, working in harmony in each region with a district manager of the Car Service Division of the American Railway Association and the traffic representatives of the regional carriers. They learn to know each other, their needs present and future, how to employ most efficiently the units of transportation and to meet and dispose of the frictions of clashing interest.

The first board was boldly established two years ago in the presumably most prejudiced states of Minnesota, South and North Dakota, and Montana. It assembled, united in service, and harmonized the most conflicting interests, of most delicate situation. In rapid succession nine additional bodies have been established in districts of common concern. Resting upon the firm basis of common interest they have builded a fabric of human relations woven in mutual confidence and respect.

They are gradually substituting facts and reason for opinion and prejudice. Knowledge and understanding for surmise and suspicion, and conference for conflict.

No Appeals Necessary

They have preserved undiminished the independence of carrier and shipper, yet found a means of reconciling their differences. Requiring in the first instance that each should exhaust its resources of reconciliation before appealing to the commodity committees or regional boards, they have been so singularly successful in adjustment that in two years not a single complaint among 137 major disputes has passed beyond their committees or boards to the Interstate Commerce Commission. Recognizing that accelerating the car unit of transportation is the basis of improved service, these boards have organized 64 terminal committees in as many principal unloading centers and assure a quicker handling of perishable products, a higher price to the producer, and a greatly expedited movement of equipment. They have stimulated a more rapid movement of western empties through voluntary action than has hitherto been attained by mandatory regulation. They have vastly aided heavier loading of equipment by shippers and better care and prompter release by receivers of freight. In the Northwest they have procured the adoption of uniform practice for the distribution of grain cars between co-operative, independent, and old line elevators and at the height of the largest grain movement in the memory of Duluth laid a voluntary embargo upon the most sensitive of grain markets without incurring an unfriendly criticism. In the last two varying years, the first of evenly distributed car demand, and the last breaking all the records of transportation history, car service remained adequate without congestion, without shortage of equipment, and without shipping complaint and with a notable increase in serviceable locomotives and cars in storage.

It would be erroneous to attribute this remarkable result to these new forms of co-operation alone. No less essential was the vast addition to physical facilities and plants made by the carriers and the systematic co-operation in car distribution through the Car Service Division of the American Railway Association. But without the informed, sympathetic, and continuing co-operation of the public through the Regional Advisory Boards this splendid mechanism of co-ordinated effort had lacked a vital element.

Which is the better, that shipper and carrier shall each among themselves pursue their different ways presenting their inevitable differences to public boards and commissions, to fasten upon the most sensitive and complex of essential social instrumentalities the inflexible rule of a statute, or, that they join hands in working out locally, regionally, and nationally the best means of utilizing this vital form of social service?

Superseding Government Interference

Nor is this heartening spectacle without its larger lesson in an hour like this. Lord Moulton in his masterly analysis of the domain of law finds it divisible into that of the positive statute, the domain of manners and that of liberty. The first represents the field of rigid rule; the second the vast domain of custom; the third that of freedom which insensibly merges into the former. We have witnessed in the past decade, we shall see now and hereafter, the continuing effort of those determined to enlarge the field of positive law, and ever lessen that of either manners or liberty. As our industrial civilization becomes daily more complex it must find self-imposed restraint increasingly growing within the structure, by the voluntary action of enlightened self-interest or in social self-defense it will be increasingly imposed by law. As each business establishes its ethical standards, it builds custom as a constructive substitute for legal coercion and by the acts of individuals and groups makes less necessary the intervention of public authority.

THE COLONIZATION DEPARTMENT of the Canadian Pacific has completed an unusual transaction in the settlement of farm land in western Canada through the sale of three sections, or nearly 2,000 acres of farm land, in Alberta to a woman. The purchaser plans to cultivate the land on a co-operative basis with her eight sons. She plans to put up a house in the center of the tract for herself and her five unmarried sons, and each of the three married sons will have his own house on the property.

Straight Line Passenger Car Repair Shops

Two Alternate Shop Designs Proposed to Use Straight Line Method in Repairing Passenger Cars

By Lawrence Richardson
Whiting Corporation, Chicago

THE GRATIFYING RESULTS obtained from the application of straight line principles to freight car repair shops warrant their consideration for passenger car and locomotive shops. In one case the increase in production per man hour on freight car work was 48 per cent. To secure this increase large additional facilities would be warranted but actually the necessary changes in old shops are small and new shops can be constructed on a straight line basis at little, if any, additional cost.

Straight line passenger car repair shop layouts are shown in diagrammatic plan in Figs. 1 and 2. The main thought has been to bring out the basic principles rather than to try to show the details of an actual layout. Available property invariably sets up limitations that call for a special study of each case. This fact is recognized in the two layouts shown, one being for a long narrow area and the other for a property more nearly a square. The principles in both layouts are the same.

While a uniform run of work and production is necessary in straight line freight car shops, it is not as essential in passenger car shops. Repetition with increasing speed results in the first case while reduction in the movement of material is the basic idea in the passenger car layout. A study of the time actually spent working and that spent moving or getting material shows that these are about equal. Reduction of the percentage of unproductive time is the

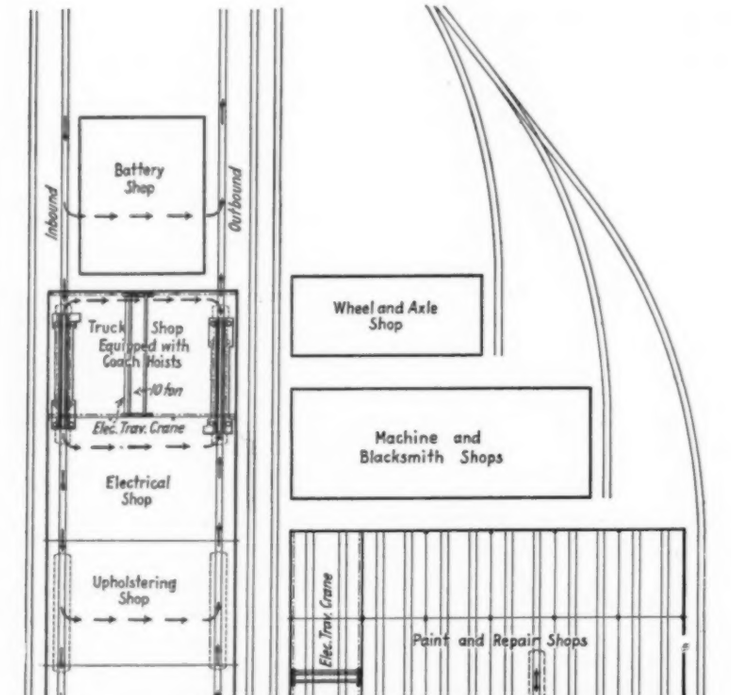


Fig. 1—Straight Line Passenger Car Shop Layout for an Approximately Square Area

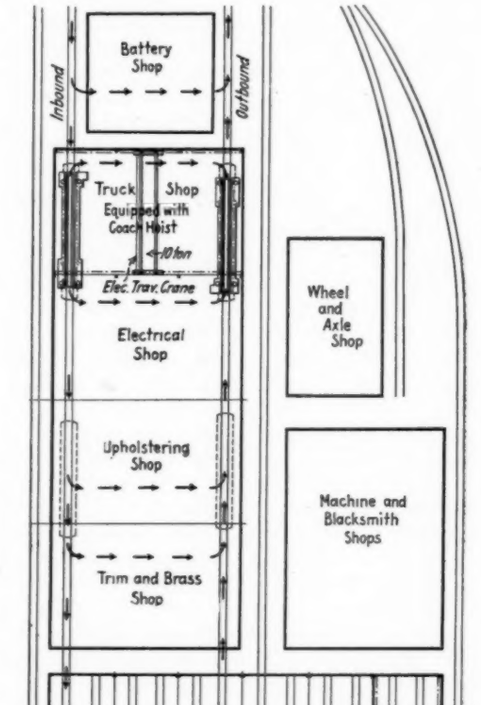


Fig. 2—Straight Line Passenger Car Shop Layout for a Long, Narrow Area

main idea worked out in the layouts shown. A limited specialization is also possible.

The basis of the layouts is an inbound track where the operations are performed in their usual sequence, and an outbound track where the operations are performed in the reverse sequence. The individual shops are laid out between the inbound and outbound tracks so as to permit direct straight line movement of the material from one track to the other. The distance between these tracks is made a minimum, consistent with the amount of space required for the repairs. This in turn reduces the movements to a minimum. All the worn parts start moving from the inbound track through the repair operations to the outbound track where they accumulate as repaired parts,

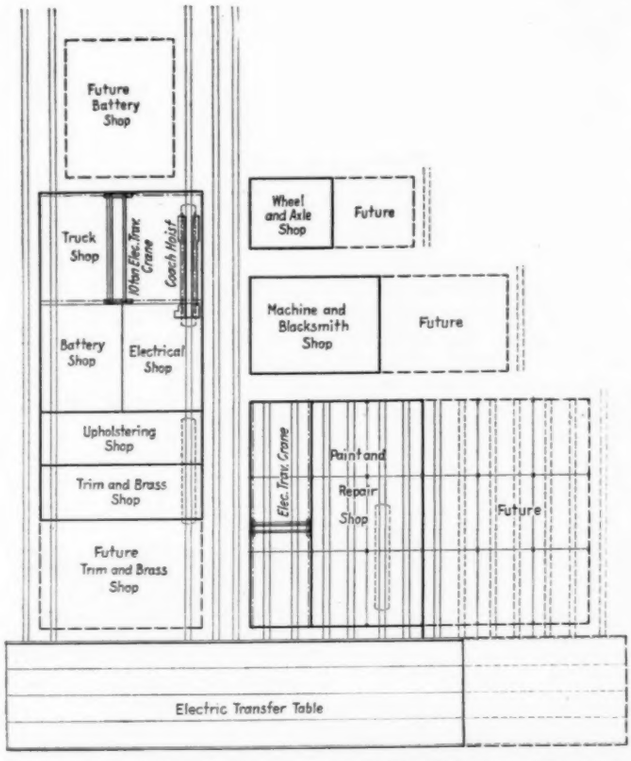


Fig. 3—A Small Shop Layout on the Straight Line Principle with Provision for Expansion

movement being in one direction only. If any operator does not hold the required pace and keep up to the schedule, the work will pile up back of him. The effect of this is to speed him up in an effort to hold his own. Sometimes he hardly realizes that he is being forced—at other times, he is anxious to avoid the remarks of his fellow-workmen. In either case, it is not necessary for the foreman to drive the man. It thus automatically helps to eliminate the chief source of friction in a shop.

Under the old system, a pile of material did not indicate much. Under straight line production, it immediately points to delay and trouble. In this way a foreman can easily see where his attention is needed. Instead of running around a large part of the time, he can devote the bulk of his efforts to strengthening his organization and perfecting methods. In discussing straight line production with a foreman in a manufacturing car shop, he made the statement that about all he had to do was to blow the whistle every hour. If any particular stage did not shift, he could locate it at once. His main effort was bent on breaking in new men and checking the condition of tools.

The value of shop schedules seems to be an agreed fact. However, there is a tendency among men accustomed to other methods to forget them. Straight line production demands a close adherence to schedule, thus assuring the benefit to be gained from this method of operating shops.

The localization of stripping and fitting is advantageous. Since all of the stripping is done at one point, the bulk of the dirt is kept from the shop proper. This makes it much easier to keep the premises clean. Inspection is also centralized. In doing the bulk of the fitting on the outbound track, it is possible to have specialized gangs do this work. An increase in production of 50 per cent in such cases is not unusual. Benches and special machines can be located adjacent to such points, so that the men can get the full benefit of them. It is a case of less walking and more working. This point can be better appreciated by considering a shop 700 ft. long. A walk to one end and back means one-quarter of a mile. This is not unusual. Pedometer tests on workmen have shown surprising distances covered in the course of a day's work.

Inasmuch as the finishing work is done on one outbound track, it is possible to make all the necessary final inspections without traveling through the shop. This results in better and more efficient supervision. As the inspectors have a permanent location, it is possible for them also to assume supervisory duties, thereby reducing the overhead charges. Some roads prefer to have the re-trucking and final inspection made outside in order to get the benefit of full daylight. In this case, the outbound track would be just outside the shop instead of just inside as shown.

Sequence and Location of Shops

The individual shops are arranged in the sequence in which the work is to be done, the first operation being the removal of batteries. Therefore, the battery shop is the first shop on the inbound track. In view of the tendency to separate the battery shop from the rest of the repair shops, on account of the fumes and other features, it has been shown in a separate building. The worn batteries are received at one end of the shop, moved through the shop as they are repaired and despatched through the opposite end in good condition. At this point they meet the outbound car in its last position where they are replaced just before the car is turned out for service. In many cases, the battery shop also takes care of batteries shipped in from road points. Such shipments can be readily handled in the layout shown without interference with the current repair work.

Design and Location of Truck and Wheel Shops

While the location of the truck shop is more or less optional, it has been shown in this location in order to make it adjacent to the wheel shop. In view of the fact that the wheel shop does as much work for outside points as it does for the repair shop, it has been located so that carloads of wheels received from outlying points may be moved in or out without interfering with the general shop operations. To handle the truck work properly, this shop should be provided with crane service. It is possible to give this crane enough capacity to untruck the cars although the more economical way would be to provide a lower capacity crane capable of handling a truck. The cars could then be untrucked by the use of portable coach hoists, or jacks, the crane being used for removing the trucks and handling them through the truck shop. Shop trucks are used for the movement of the car body to and from the main shop. The shop trucks released from the outbound cars are moved across the truck shop and placed under the inbound cars. When the shop is running full capacity, as soon as one car is finished, another one to be repaired takes its place. The one turned out releases a track—and a pair of trucks—to the inbound car. This means that no storage of shop trucks is required. Only when a truck is left unoccupied is it necessary to store shop trucks.

The electrical shop is located next, in order to handle the

electrical generators from the trucks as well as electrical apparatus from the cars. The movement through the electrical shop conforms to the general principles mentioned in connection with the truck and battery shops.

The upholstering shop is next. The space for this shop may be a second floor above one of the other shops as only light machinery is required and the cushions and chairs are easily handled. If necessary, storage may be provided in mezzanine galleries. The trimmings and brass work are removed at the last position and moved through the trimming and brass shop in accordance with the principles mentioned.

If desired, this last space may be separated from the shop proper and used as a scrubbing room. In this way, an extra move can be saved before placing the car bodies in the general repair shops.

The number of stops on the inbound and outbound tracks may be regulated to suit the production required. If the output is limited, two stops will be found sufficient as indicated by the dotted lines. If the output is increased, it can be taken care of by increasing the stops, space having been provided so as to make this number as high as five.

Movement of Cars

The movement of the cars from stage to stage may be accomplished in several ways. No one way is best in all cases as conditions vary widely. The weight of the cars has an important bearing. The four methods usually employed are: (1) By a shifter or tractor, (2) by a winch, (3) by hand movers, or (4) by gravity. The last method is to be preferred, when possible to use it, on account of the minimum effort and time required. If the track is given 5 in. drop per hundred feet, the car can be moved readily. With this fall, the car will not start itself. On the other hand, in summer weather, when started, it can be kept moving easily. Sometimes it only requires pushing by hand. Hand car movers are used to give it a start.

After the car is stripped and scrubbed it is removed to the general repair shop by means of a conventional type of transfer table. Here it is painted and given repairs in accordance with usual practice. Both operations may be done in one shop or there may be separate repair and paint shops. The largest owners of special and passenger cars have found it satisfactory to do both operations in one shop. This saves several moves. The use of ovens for baking or drying calls for additional moves.

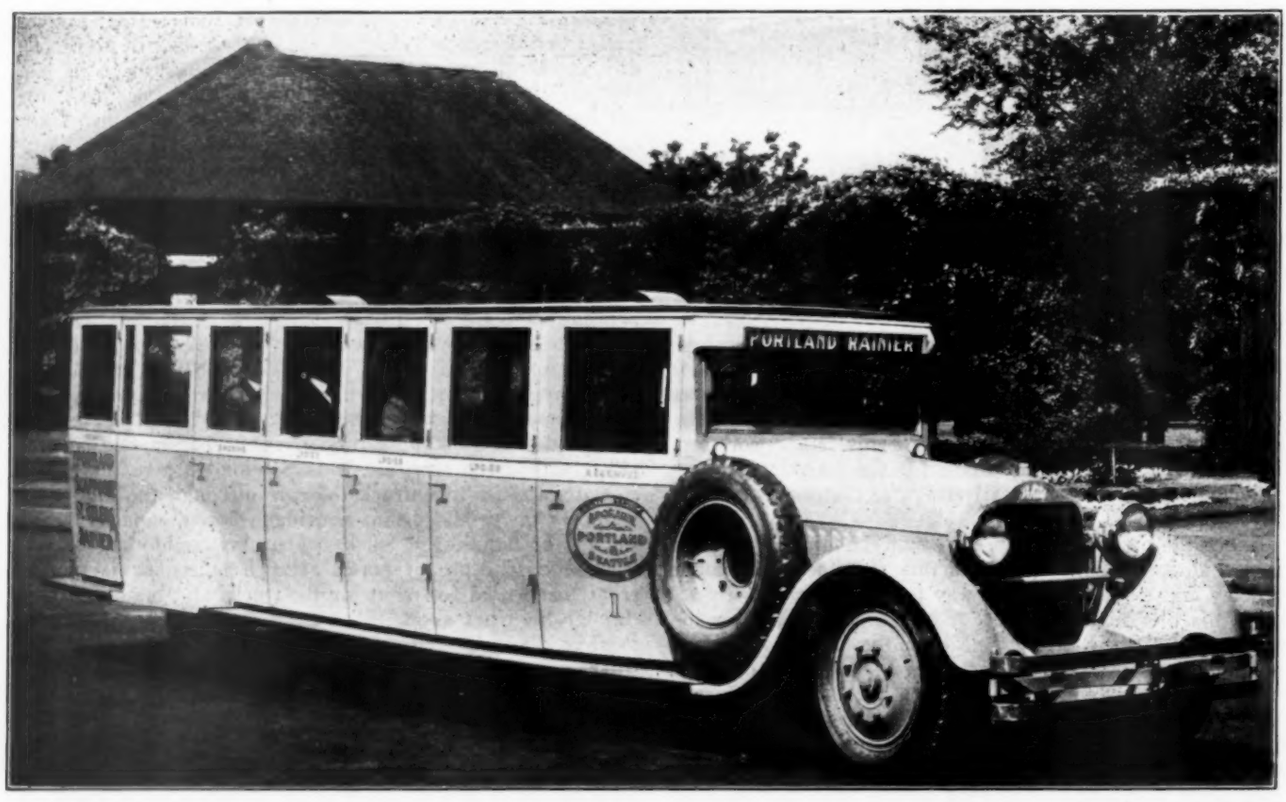
Cars, including wrecks, which need extra heavy repairs, require a considerable amount of heavy lifting. This can best be accomplished by the use of cranes. As the number is usually small, only two tracks have been set apart for this purpose.

The short span gives a low cost crane. This heavy repair shop should be walled off from the other tracks on account of the dust raised as well as the noise.

Small Shop Layout

In cases of roads not having enough equipment to warrant separate inbound and outbound layouts, it is possible to use one track for the purpose at first. Expansion can then be effected by transferring one of the operations to a far track. The development is shown in Fig. 3.

It will be noted that the first cost of the layouts shown is approximately the same as for standard shops. If anything, the first cost should be less as the faster movement requires less space. This makes the economy effected by the increased man-hour productions a net gain.



White Bus Operated by the Spokane, Portland & Seattle Between Portland, St. Helens and Rainier, 50.6 Miles, Paralleling Company's Railway Line

Winslow Bill Provides Voluntary Consolidations

Period of Five Years Provided for Voluntary Action Before Commission Adopts a Plan

WASHINGTON, D. C.

A NEW BILL "to promote the unification or consolidation of carriers engaged in interstate commerce" by voluntary action of the railroads was introduced in the House on December 8 by Representative Samuel E. Winslow of Massachusetts, chairman of the House committee on interstate commerce, as H.R. 10,470. The bill is intended to carry out the recommendations made by President Coolidge in his message to Congress and also is regarded as more in line with the ideas of the railroad executives, as well as those of the shippers as expressed by the National Industrial Traffic League, than the bill introduced by Senator Cummins earlier in the year. For a period of five years, under the terms of this bill, consolidations could be effected by voluntary action of the carriers, under state or federal laws, upon petition to and approval by the Interstate Commerce Commission, without reference to any general plan, and provisions are inserted to facilitate such consolidations. If at the end of five years, however, the unification into systems has not been effected, the commission is directed to proceed as provided in the consolidation provisions of the Transportation Act to adopt and publish a plan for such consolidations, if any, as it may deem in the public interest, reporting to Congress its suggestion of a method by which the authority of the government may be directly invoked to bring about such consolidation. The bill also includes provisions for federal incorporation.

Some of the principal provisions of the Winslow bill are as follows:

Declaration of Policy

Sec. 202. It is hereby declared to be the policy of Congress to authorize and bring about the unification (through consolidation or any other method specified in section 203 or 205 of this title) of the property of carriers into a number of strong and efficient systems, which will, as far as practicable, maintain the existing routes and channels of trade and commerce, and preserve, as between themselves, the advantages of effective competition in service, to the end that the properties of the carriers in each system shall ultimately be managed and operated and owned or controlled by a single corporation, economy be promoted, and unnecessary duplications be eliminated.

Petition of Carriers

Sec. 203. (1) In order to bring about such unification, two or more carriers shall have power to agree on, and may jointly petition the commission for the approval of, a plan therefor to be carried out under any state laws conferring the requisite powers, or under the authority of this title. Such petition shall set out the plan in such detail as the commission may require.

(2) The plan may provide for one or more of the following:

(a) A corporate consolidation or merger of two or more carriers into one corporation;

(b) The transfer to another corporation (by purchase, sale, exchange, lease, or otherwise) of all or a part, or the right to operate all or a part, of the properties of a carrier, and, if so desired, the transfer of all or a part of the franchises of a carrier;

(c) An acquisition of securities (by purchase, sale, exchange, or otherwise) issued by a carrier, if in pursuance of an arrangement or purpose to acquire control or additional control of a carrier, directly or indirectly, through voting power or otherwise;

(d) The organization of, or the reincorporation of a carrier as, a federal railroad corporation, under Title III of this act.

(3) If a joint agreement is entered into in accordance with the provisions of section 204 of this title, a copy thereof shall be filed as a part of the petition.

Sec. 204. (1) Two or more carriers may petition the commission for the approval of a plan to be carried out under the authority of this title, if the boards of directors of such carriers have entered into a joint agreement, under their respective corporate seals, proposing such plan.

Sec. 205. In order to bring about a unification by the acquisition of securities, in accordance with the policy declared in section 202, any carrier may petition the commission for the approval of a plan to be effected solely by the acquisition by such carrier of securities issued by any other carrier or carriers, if such plan has been adopted by the board of directors of such carrier. Such petition shall set out the plan, including the terms, methods, and purpose of the proposed acquisition and the issue of any new securities that may be involved therein, in such detail as the commission may require.

Notice and Hearing

Sec. 206. (1) The commission shall give reasonable notice to each of the carriers filing a petition under section 203 or 205, and to the governor of each state in which is located any part of the lines of any of such carriers, of the date and place for a public hearing. Such carriers, and any governor so notified, or any representative of the state designated by him, shall, and any other person (in the discretion of the commission) may, be afforded a reasonable opportunity to be heard.

(2) In any proceeding upon a petition filed under section 203 or 205, the commission may, in its discretion, without further hearing, take any action which it is authorized to take under the provisions of section 20a of this act; and in any proceeding upon a petition filed under section 203, the commission may, in its discretion, without further hearing, take any action which it is authorized to take under the provisions of paragraphs (18), (19), or (20) of section 1 of this act.

Sec. 207. If the commission finds that the provisions of this title have been complied with, and is of opinion, after such hearing, that the public interest will not be adversely affected and that the policy of Congress herein declared will be promoted thereby, the commission may enter an order approving the plan, on the terms and conditions and by the methods set forth in the petition, or with such modifications thereof, or upon such terms, conditions, and methods, as it may prescribe.

Consent of Carriers

Sec. 208. (1) The order of the commission shall not become effective unless the board of directors and the holders of the voting securities of each of the carriers designated therein consent thereto.

(2) Any such board of directors shall be held to have consented thereto if at least a majority of the number of such directors in office vote for its adoption.

(3) The holders of the voting securities of any such carrier shall be held to have consented thereto if the holders of at least a majority in amount of such voting securities, present in person or by proxy at an annual or special meeting, vote for its adoption. Notice of such meeting shall be given, and such meeting shall be held and conducted, in any manner lawful for an annual or special meeting (as the case may be) of the stockholders of such carrier.

Sec. 209. The order of the commission shall become effective upon the certification by the commission that the board of directors and the holders of the voting securities of each of the carriers designated therein have consented thereto, in the manner provided in section 208.

Effect of Order of Commission

Sec. 210. (1) On and after the effective date of the order of the commission approving a plan, each carrier designated therein shall have authority and power to carry into effect, and to do any and all acts necessary or appropriate in order to carry into effect, such plan, in accordance with such order, whether the plan is to be carried out under state laws or under this title; and such carrier shall be relieved from the operation of the "anti-trust laws" as designated in Section 1 of the act entitled "An act to supplement existing laws against unlawful restraints and monopolies, and for other purposes," approved October 15, 1914, of paragraph (12) of section 20a of this act, of all other restraints and prohibitions of any other law of the United States, and from any restraints or prohibitions of the laws or constitution of any state or any decision or order of any state authority, in so far as may be

necessary to enable such carrier to enter into and carry into effect such plan.

(2) If the plan provides for a corporate consolidation or merger of two or more carrier corporations to be effected under the authority of this title, such corporations, on and after the effective date of the order of the commission, shall be held to be consolidated or merged, and the constituent corporations and the resulting corporation shall proceed to carry out the details thereof, in accordance with such order, and the resulting corporation shall have authority and power to carry into effect, and to do any and all acts necessary or appropriate in order to carry into effect such plan, and may proceed to transact and carry on business.

(3) If the plan provides for the organization of, or the reorganization of a carrier as, a federal railroad corporation under Title III of this act, such corporation, on and after the effective date of the order of the commission, shall be held to be duly incorporated under this act.

(4) The entry of any order by the commission under this title and the certification by the commission under Section 209 shall be conclusive evidence that the carriers designated in such order have complied with the provisions of this title, which are conditions precedent to the entry of such order and such certification.

Effect of Corporate Consolidation or Merger Under This Title

Sec. 211. (1) Upon the effective date of the order of the commission, in the case of a corporate consolidation or merger of two or more carrier corporations (hereinafter referred to as the "constituent corporations") into one corporation (hereinafter referred to as the "resulting corporation"), effected under the authority of this title, and except as restricted or limited in the original or modified joint agreement or in the order of the commission—

(a) The resulting corporation shall have all and singular the rights, privileges, powers, immunities, exemptions and franchises of each of the constituent corporations;

(b) The resulting corporation, in accordance with the terms and conditions and by the methods set forth in such order, shall have power to issue, sell, or exchange securities;

(c) All property, real and personal, and all debts due on whatever account, including stock subscriptions and other things in action, belonging to each of the constituent corporations, shall be held to be transferred to and vested in the resulting corporation, without further act or deed, as effectually as they were vested in any constituent corporation;

(d) All debts, liabilities, and duties of each of the constituent corporations shall thenceforth attach to the resulting corporation, and become and be its debts, liabilities, and duties, and be enforcible against it to the same extent as if said debts, liabilities, and duties had been incurred or contracted by it.

(2) In the case of any such consolidation or merger effected under the authority of this title, the rights of creditors and all liens upon the property of any of the constituent corporations shall be preserved unimpaired, and the respective corporations shall be deemed to continue in existence so far as may be necessary to preserve the same.

(3) Any action or proceeding pending by or against any such constituent corporation may be prosecuted to judgment as if such consolidation or merger had not been effected, but the resulting corporation may, upon its motion, be made a party thereto.

(4) The title to the real estate, either by deed or otherwise, vested in any of the constituent corporations shall not be held to revert or to be in any way impaired by reason of this act or of any such consolidation or merger.

Sec. 212. (1) In the case of any plan proposed by two or more carriers under section 203 (whether such plan is to be carried out under the authority of state laws or under this title), any holder of a security issued by any carrier a party to the plan in respect of which he is entitled to vote (whether or not in the election of directors) and who did not vote for the adoption of the order may, within 90 days after the annual or special meeting at which the holders of the voting securities of such carrier consented thereto, notify such carrier in writing that he does not assent. Any such holder who does not so notify such carrier within such time shall be held to have consented to such order.

(2) The securities issued by any carrier a party to the plan and held by any such non-assenting holder, in respect of which he is so entitled to vote, shall be purchased by such carrier, or by the corporation which is to manage and operate and own or control the properties, or, if, for any reason, not so purchased, shall be acquired by condemnation by such carrier or such corporation, in accordance with the provisions of section 213.

Sec. 213. (1) Any carrier or corporation authorized to acquire by condemnation the securities of any non-assenting holder, under the provisions of section 212, may petition the United States district court for a judicial district within a state in which the carrier which issued such securities is chartered, for the appointment by the court of the Interstate Commerce Commission as a board of appraisers to determine and report to the court the value of such securities.

(2) Any corporation authorized by an order of the commission entered under this title to acquire any property (or any right or interest therein, including a leasehold), other than securities, held or enjoyed without power of assignment or transfer, may petition the United States district court for the judicial district in which such property is located, or of which the owner of such property, right, or interest is an inhabitant, for the appointment by the court of the Interstate Commerce Commission as a board of appraisers to determine and report to the court the value thereof.

(3) The United States district courts and the Supreme Court of the District of Columbia are hereby given jurisdiction to hear and determine condemnation proceedings under this section, and to enter appropriate orders of condemnation therein, and it shall be the duty of the Interstate Commerce Commission, upon any such appointment, to act as a board of appraisers.

Sec. 214. (1) Neither gain realized upon the sale or other disposition of property nor income from any distribution shall be taxed, nor shall any loss so realized be allowed as a deduction, under any revenue law of the United States (whether or not such gain, income, or loss is recognized under such law), if the sale or other disposition or distribution is made in pursuance of a plan approved by the commission under this title. The basis upon which depletion, exhaustion, wear and tear, and obsolescence are to be allowed in respect of such property (but not the basis for determining gain or loss upon a subsequent sale or disposition of such property, or af any security of a corporation making any such distribution) shall be properly adjusted, in accordance with the extent to which the gain or loss was not so taxed or allowed, under regulations prescribed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury.

(2) No tax shall be levied or collected under any revenue law of the United States, or by or under the authority of any state or any political subdivision thereof, in respect of any issuance, sale, delivery, or transfer of any security of any agreement to sell, or memorandum of sale of, any security, or any grant, assignment, transfer, or other conveyance of lands, tenements, or other realty, if in pursuance of a plan approved by the commission under this title, or in respect of any means of proceedings adopted to carry such plan into effect; nor shall any tax be levied or collected by or under the authority of any state, or any political subdivision thereof, upon the transfer of, or succession to, any security issued by a carrier, upon the death of the owner of such security, if such owner, at the time of death, was not domiciled in such state.

Sec. 215. (1) Nothing in this title contained shall impair the right of any carrier, under the laws of any state or of the United States conferring the authority, or under the provisions of paragraphs (18), (19), and (20) of section 1, or paragraph (2) of section 5, of this act, to acquire, by purchase, lease, or in any wise, the property or control of the securities of, or to enter into consolidations or mergers with, another carrier or carriers.

Sec. 216. If at the end of five years from the passage of this act the unification into systems of the properties of all the carriers within the continental United States has not been effected, it shall thereupon be the duty of the Interstate Commerce Commission to proceed as provided in paragraphs (4) and (5) of section 5 of this act to adopt and publish a plan for such consolidations, if any, as the commission may deem in the public interest, except that the commission shall have discretion to exclude from such consolidations any property (terminal or line) the operation of which as a separate property may be deemed by it to be in the public interest, and also to exclude from such consolidations any lines affiliated with the lines of Canadian companies; and the commission shall formulate and report to Congress its suggestion of a method whereby the authority of the government may be directly invoked to bring about such consolidations.

The bill (S. 2224) introduced by Senator Cummins provides for voluntary consolidations for a period of two years; for the appointment of a consolidation committee, upon the expiration of two years, to consist of one member of the commission and two representatives of the carriers (one for the shareholders and one for the creditors) to devise methods for bringing about consolidation; and for compulsory consolidation after a period of seven years from the passage of the Act, by division of rates. All of the consolidations must be in harmony with the plan prepared and adopted by the commission, except that during the first two years, if a plan has not been adopted, the commission may approve if it will bring about a consolidation into a system, in accordance with the policy declared.

General News Department

Mechanical Division Meeting in 1925

At a meeting of the General Committee, Division V—Mechanical A. R. A., held in New York, December 11, it was decided that the annual meeting of the Division for 1925 be a strictly business meeting, and that it be held in Chicago during the week commencing June 15.

It was decided at the meeting that the attendance at the Chicago meeting be restricted to the members of the General Committee of Division V, members of the various committees of Division V, and the voting representatives of the railway members of Division V, American Railway Association.

Later in the day of December 11, the General Committee of Division V met the Executive Committee of the Railway Supply Manufacturers' Association and announced the decision. J. J. Tatum, chairman of Division V, emphasized the fact that inasmuch as no exhibit of railway supplies and machinery would be held in 1925, it was to be hoped that in the following year a mechanical convention would be held with a larger and better exhibit than ever and a large attendance of railway supply men.

The Interstate Commerce Commission has again postponed the effective date of its order in the assigned car case from December 15 to January 15.

The Grand Trunk grain elevator at Port Huron, Michigan, was destroyed by fire on December 9, together with 600,000 bushels of grain. Estimated loss, including damage to a vessel, $500,000.

Six passengers killed and many injured is the reported result of a rear collision on the Key System (electric) line near Oakland Pier, Cal., on December 4. A train of the Key Route was run into by a train, consisting of single car, of the Sacramento Short Line.

The shops of the Southern Railway at Coster, near Knoxville, Tenn., were damaged by fire on December 1 to the extent of $170,000. The principal damage was to the paint shop, $70,000, and passenger and baggage cars, $95,000. Fourteen cars, including two dynamometer cars, were completely destroyed.

The Interstate Commerce Commission has granted the petition of the Galveston, Harrisburg & San Antonio for modification of its train control orders to authorize installation on the lines between Rosenberg and Glidden, Tex., and between Glidden and San Antonio, Tex., in lieu of the installations required in the original orders.

Simultaneous Application of M. C. B. Couplers to All Rolling Stock in Japan

On some day in June, 1925, yet to be determined, the standard M. C. B. automatic coupler will be placed in service simultaneously on all the rolling stock of the Imperial Japanese Government Railways, replacing the manual type with side buffers now in use.

Railroad Presidents Entertain Youthful Livestock Raisers

Delegates to the Third National Boys' & Girls' Club Congress held at the Hotel Sherman, Chicago, on December 4, were given a complimentary dinner by a company of railroad presidents: Daniel Willard, Baltimore & Ohio; Hale Holden, Chicago, Burlington & Quincy; George Hannauer, Chicago Junction; Samuel M. Felton, Chicago Great Western; C. H. Markham, Illinois Central; W. H. Finley, Chicago & North Western; J. E. Gorman, Chicago, Rock Island & Pacific; W. B. Storey, Atchison, Topeka & Santa Fe and J. E. Taussig, Wabash. The principal address was made by Mr. Finley. Entertainment was furnished by the Pullman Porters' Quartet. Prizes were awarded at the dinner in connection with various competitive tests held at the International Livestock Show.

Senate Committee Wants Valuation Completed in Two Years

The Senate committee on interstate commerce at a meeting on Wednesday authorized Senator Cummins to prepare a resolution expressing the sentiment of the Senate that sufficient appropriations should be made for the I. C. C. to complete the valuation of the railroads in two years. The committee also decided to begin hearings on January 7 on the Cummins consolidation bill and to give further consideration next week to the rate revision resolution. It also recommended the confirmation of the reappointment of Commissioners Meyer and Campbell.

Rules for Conducting Motor Bus Lines

The Public Service Commission of New York State has issued, to go into effect on January 1, an elaborate order prescribing rules for the operation of motor bus lines which, in New York, have to have a license from the Public Service Commission; a prominent feature of the code being that part forbidding the use of gasoline tanks inside a bus. In buses where the same door is used both for entrance and exit, an emergency door must be provided at the opposite end.

The operating rules, designed to be uniform throughout the state, cover all of the ordinary circumstances and conditions of operation, after the style of books used on railroads and street railroads.

Canadian National Earnings Fall

The aggregate gross earnings of the Canadian National for the first ten months of 1924 show a falling off of $11,070,018, or 5.4 per cent., while operating expenses decreased $9,724,969, or 5 per cent. The resultant decrease in net earnings for the period was $1,345,049, or 11.1 per cent. Gross earnings, operating expenses and net earnings for the month of October and for the ten months' period in both years, are as follows:

October	1924	1923	December	P.C.
Gross	$22,840,698	$26,257,773	$3,417,075	13.01
Exp.	18,146,855	21,072,756	2,925,901	13.88
Net	4,693,843	5,185,017	491,174	9.47
Ten months—				
Gross	195,325,323	206,395,341	11,070,018	5.36
Exp.	184,555,659	194,280,629	9,724,969	5.01
Net	10,769,664	12,114,712	1,345,049	11.10

Transportation Studies at Yale

Winthrop M. Daniels, professor of transportation at Yale University, announces that a national survey of the general transportation problem is to be made, under the direction of his department. The work will be done by a group of professors and graduate students of the university. The plans call for special attention to the engineering and economic aspects of the situation. The researches will cover highway, water and aerial transportation, as well as railroad problems. The object is to discover what program of graduate studies in transportation will be best adapted both to the needs of the country and the facilities at the command of the university.

Intensive studies will be made of the work done by railroad bureaus, organizations interested in traffic regulation, government departments and other public agencies. Instruction and research done by universities and technical schools will be examined.

The survey will be conducted by Messrs. Daniels, Samuel W. Dudley and Charles J. Tilden. They will be assisted by five fellows, at a stipend of $1,000 each, whose appointment is made

possible by the fund received by the university in 1914 under the will of Lord Strathcona and Mount Royal.

From this fund, which has already provided for two professorships, the Yale Corporation has also established two undergraduate scholarships, each of $600, assignable to students showing proficiency and promise in the economic or engineering phases of transportation.

Illinois Central Illuminates the Tax Problem

In an advertisement which is being published in the local newspapers along its lines the Illinois Central shows how government ownership will increase taxes. The advertisement points out that Class I roads paid taxes amounting to $330,956,606 last year, of which $253,893,675 went to states, counties, municipalities and other local governments for the support of their various public enterprises. Class I railroads paid $6,767,560 in Iowa; and if railway property were to become exempt from taxation the remaining tax payers of that state would have to pay $6,767,560 more taxes a year than they now do; or else expenditures for schools, roads and other public enterprises would have to be curtailed by that amount. Last year 43.4 per cent of all the taxes paid by the Illinois Central in Iowa went to the support of the public schools, while the total amount contributed by all of the railroads of the state for public education in Iowa last year was about $3,500,000. Examples showing the amount of taxes paid by railroads in other states are also cited. Attention is also called to cases of government-owned railroads which have been offered for sale to private individuals.

Wage Statistics for September

The total number of employees reported by Class I railroads for the month of September, 1924, was 1,801,296, a decrease of 144,621, or 7.4 per cent as compared with the number reported for the same month last year, according to the Interstate Commerce Commission's monthly bulletin of wage statistics. The total compensation decreased $14,557,938 or 5.7 per cent. A comparison of the returns for the months of August and September, 1924, shows that in September the employment increased 0.7 per cent and the total compensation increased 0.5 per cent.

The monthly earnings, by groups, were as follows:

Group	Monthly earnings of: On daily basis Sept., 1924	On daily basis Sept., 1923	On hourly basis Sept., 1924	On hourly basis Sept., 1923
Executives, officials and staff assistants	$437	$429	...	...
Professional, clerical and general	182	179	$123	$120
Maintenance of way and structures	240	239	88	89
Maintenance of equipment and stores	247	244	122	122
Transportation (other than train, engine and yard)	98	97	122	119
Transportation (yardmasters, switch tenders and hostlers)	260	256	149	143
Transportation (train and engine service)	...	...	194	186

Canadian Cabinet Hears Crow's Nest Pass Arguments

The Crow's Nest Pass Agreement continues to occupy the centre of the stage in Canadian railway and federal political circles. Two full days last week—Thursday and Friday—were spent by the federal Cabinet in hearing argument for and against the appeal of the three prairie provinces, through Herbert J. Symington, for an order of the Cabinet to the Dominion Railway Board to rescind the latter's decision of October 14 last which set aside the Crow's Nest Agreement as a factor in Canadian railway freight rates. As an appeal from the same provinces on the same question is to be heard in a few days by the Supreme Court of Canada it is highly probable that any decision of the federal Cabinet will be withheld until the Supreme Court has issued its judgment.

Contending that, as the Crow's Nest Pass Agreement arose out of legislation by the Canadian Parliament to sanction a pact between the government of Canada and the Canadian Pacific in 1897, the Canadian Parliament was still supreme as far as this legislation was concerned, and the federal Government, which was the executive of Parliament, should insist upon the will of Parliament being obeyed and the Dominion Railway Board should be ordered to rescind its decision and restore the Agreement to full effect as on July 7 last, Mr. Symington, for the appeal, used some strong language against the Railway Board.

G. G. McGeer, appearing for the province of British Columbia and supporting the appeal of Mr. Symington, declared that Parliament in passing the Crow's Nest Pass Act had intended that it should be subject to the non-discrimination clauses in the general Railway Act. Parliament had no intention of discriminating against any section of Canada. If the matter went to the Supreme Court, that body would look at the question from the point of view of law and not in the light of anything that had been said in Parliament. "I submit," said Mr. McGeer to the Council, "that your powers are absolutely supreme and that the theory that you should wait for the Supreme Court judgment is not a sound one. Equality of treatment is a matter that does not need the interpretation of the Supreme Court. You are asked to decide whether or not your enactment is binding upon the Board of Railway Commissioners."

Premier Herbert Greenfield, of Alberta, and Premier John Bracken, of Manitoba, also appeared and spoke briefly in support of the appeal.

Appearing for the railways and against the granting of the appeal were: Eugene Lafleur, Montreal, for the Railway Association of Canada; W. N. Tilley, Toronto, and E. P. Flintoft, Montreal, for the Canadian Pacific Railway; and Alistair Fraser, Montreal, for the Canadian National Railway.

Railway Revenues and Expenses for October

Operating revenues of Class I railroads having a total mileage of 236,172 miles amounted to $572,600,000 in October, according to reports compiled by the Bureau of Railway Economics from returns filed by the carriers with the Interstate Commerce Commission. This was a decrease of $15,314,000 or 2.6 per cent as compared with the same month last year. Operating expenses totaled $403,663,800, a reduction of $41,676,650 or 9.4 per cent. The net operating income was $127,105,100, as compared with $103,775,700 in October last year, or an increase of $23,329,400. In September, 1924, the net operating income was $116,760,259.

Class I railroads for the first ten months this year had a net operating income of $805,075,000, which was at the annual rate of return of 4.31 per cent on their property investment, as compared with $826,616,250 or 4.56 per cent for the same period last year.

Earnings by districts for the first ten months with the percentage of return based on property investment on an annual basis were as follows:

		Per Cent
New England Region	$28,491,914	3.49
Great Lakes Region	153,621,545	4.86
Central Eastern Region	165,357,255	4.28
Pocahontas Region	40,430,969	5.52
Total Eastern District	387,901,683	4.53
Total Southern District	115,161,402	5.27
Northwestern Region	82,499,412	3.07
Central Western Region	147,898,178	4.18
Southwestern Region	71,614,403	4.26
Total Western District	302,011,993	3.82
United States	805,075,078	4.31

Eleven Class I carriers operated at a loss in October, of which seven were in the Eastern district and four in the Western district. In September eight roads had operating deficits.

While operating revenues in October showed a decrease of only 2.6 per cent, operating expenses decreased 9.4 per cent. This decrease in part was due to a reduction of $26,838,750 or 12.5 per cent in maintenance expenses. For the ten months' period alone, there was a reduction in maintenance expenses of $192,857,000 or 10 per cent. Expenditures in October for maintenance of way alone showed a reduction of $6,261,931 or 7.7 per cent, while the reduction in expenditures for maintenance of equipment amounted to $20,576,800 or 15.4 per cent.

Class I railroads in October, out of each dollar of operating revenues, spent 70.50 cents for expenses. This was the lowest operating ratio for any single month since July, 1918. The operating ratio for October last year was 75.75.

Carriers in the Eastern district had a net operating income in October of $51,735,450, as compared with $37,748,695 in October last year. Freight traffic in the Eastern district in October, according to incomplete returns, was about 3 per cent under that of the corresponding period last year. Operating revenues of the Eastern carriers totaled $269,428,700, a decrease of 5 per cent. Operating expenses totaled $199,987,650, a decrease of 12.7 per cent. The net operating income for the first ten months this year was $387,901,680, compared with $419,243,150 during the corresponding period last year.

Class I carriers in the Southern district in October had a net operating income of $13,798,900, compared with $11,793,250 in October last year. Freight traffic on the Southern roads in October was about 2.5 per cent above that for the same month last year. Operating revenues totaled $69,598,450, a decrease of 2.1 per cent under, while operating expenses totaled $51,420,200, a decrease of 7 per cent. The net operating income for the first ten months this year was $115,161,400, as compared with $107,843,000 last year.

Carriers in the Western district had a net operating income in October of $61,570,700, compared with $54,233,760 for the same month last year. Freight traffic in the Western district showed an increase of approximately 7 per cent over October, 1923. Operating revenues totaled $233,573,000, or practically the same as those for October last year, while operating expenses totaled $152,256,000, a decrease of 5.4 per cent. For the first ten months this year the net operating income was $302,011,990, as compared with $299,531,000 for the same period one year ago.

Exhibit Space Assigned for Railway Appliances Show

At a meeting of the Board of Directors of the National Railway Appliances Association, held in Chicago on December 1, a total of 159 companies were assigned space for the annual exhibit of appliances to be held in the Coliseum, Chicago, on March 9-12, 1925, at the time of the twenty-sixth annual convention of the American Railway Engineering Association. The names of the companies assigned space are as follows:

Adams & Westlake Company, Chicago.
Adams Motor & Manufacturing Company, Chicago.
Air Reduction Sales Company, New York City.
American Bolt Corporation, Chicago.
American Car & Foundry Company, Chicago.
American Casting Company, Birmingham, Ala.
American Chain Company, Inc., Bridgeport, Conn.
American Hoist & Derrick Company, St. Paul, Minn.
American Malleable Castings Association, Cleveland, Ohio.
American Railway Hydrant & Valve Company, Stapleton, N. Y.
American Steel & Wire Company, Chicago.
American 3 Way-Luxfer Prism Company, Cicero, Ill.
American Valve & Meter Company, Cincinnati, Ohio.
Anchor Company, Milwaukee, Wis.
Andrix Lock Nut Company, Inc., Adrian, Mich.
Arcco Anti-Rail Creeping Company, Inc., Owego, N. Y.
Argyle Railway Supply Company, Chicago.
Armco Culvert & Flume Manufacturers' Association, Middletown, Ohio.
Atlas Portland Cement Company, Chicago.

Baker, R. & L., Company, Cleveland, Ohio.
Balkwill Manganese Crossing Company, Cleveland, Ohio.
Barber Asphalt Company, Philadelphia, Pa.
Barrett Company, New York City.
Bethlehem Steel Company, Bethlehem, Pa.
Blaw-Knox Company, Pittsburgh, Pa.
Brach Manufacturing Company, L. S., Newark, N. J.
Brown Rail Loader Company, Boston, Mass.
Bryant Zinc Company, Chicago.
Buda Company, Harvey, Ill.

Carbic Manufacturing Company, Duluth, Minn.
Carnegie Steel Company, Pittsburgh, Pa.
Carter Bloxonend Flooring Company, Kansas City, Mo.
Central Electric Company, Chicago.
Challenge Company, Batavia, Ill.
Chicago Flag & Decorating Company, Chicago.
Chicago Bridge & Iron Works, Chicago.
Chicago Malleable Castings Company, Chicago.
Chicago Pneumatic Tool Company, New York City.
Chicago Railway Signal & Supply Company, Chicago.
Chipman Chemical Engineering Company, Inc., New York City.
Clark Car Company, Pittsburgh, Pa.
Cleveland Frog & Crossing Company, Cleveland, Ohio.
Cleveland Railway Supply Company, Cleveland, Ohio.
Copperweld Steel Company, Rankin, Pa.
Concrete Surfacing Machinery Company, Cincinnati, Ohio.
Crerar, Adams & Co., Chicago.
Cullen-Friestedt Company, Chicago.

Detroit Graphite Company, Detroit, Mich.
Diamond State Fibre Company, Bridgeport, Conn.
Dickinson, Paul, Inc., Chicago.
Dilworth, Porter & Co., Inc., Pittsburgh, Pa.
Duff Manufacturing Company, Pittsburgh, Pa.

Thomas A. Edison, Inc., Bloomfield, N. J.
Electric Storage Battery Company, Philadelphia, Pa.
Electric Tamper & Equipment Company, Chicago.
Elwell-Parker Electric Company, New York City.

Fairbanks-Morse & Co., Chicago.
Fairmont Railway Motors, Inc., Fairmont, Minn.
Fleming & Son Company, J. R., Scranton, Pa.
Frog, Switch & Manufacturing Company, Carlisle, Pa.

General Electric Company, Schenectady, N. Y.
General Railway Signal Company, Rochester, N. Y.
Godwin Company, Inc., Baltimore, Md.
Graver Corporation, East Chicago, Ind.

Hall Switch & Signal Company, Garwood, N. J.
Hayes Track Appliance Company, Richmond, Ind.
Hazard Manufacturing Company, Wilkes-Barre, Pa.
Headley Good Roads Company, Philadelphia, Pa.
Hoffman Manufacturing Company, Chicago.
Howlett Construction Company, Moline, Ill.
Hubbard & Co., Pittsburgh, Pa.

Illinois Malleable Iron Company, Chicago.
Illinois Steel Company, Chicago.
Ingersoll-Rand Company, New York City.
International Signal Company, New York City.

Jaeger Machine Company, Columbus, Ohio.
Johns-Manville, Inc., New York City.
O. F. Jordan Company, East Chicago, Ind.

Kalamazoo Railway Supply Company, Kalamazoo, Mich.
Kaustine Company, Buffalo, N. Y.
Kelly-Derby Company, Inc., Chicago.
Kentucky Rock Asphalt Company, Louisville, Ky.
Kerite Insulated Wire & Cable Company, Inc., New York City
Keystone Grinder & Manufacturing Company, Pittsburgh, Pa.
Keystone Steel & Wire Co., Peoria, Ill.

Lehon Company, Chicago.
Locomotive Finished Material Company, Chicago.
Lorain Steel Company, Johnstown, Pa.
Lufkin Rule Company, Saginaw, Mich.
Lundie Engineering Corporation, New York City.
E. A. Lundy Company, Pittsburgh, Pa.

Magnetic Signal Company, Los Angeles, Cal.
Maintenance Equipment Company, Chicago.
Massey Concrete Products Corporation, Chicago.
Mechanical Manufacturing Company, Chicago.
Mercury Manufacturing Company, Chicago.
Metal & Thermit Corporation, New York City.
Miller Train Control Corporation, Danville, Ill.
Morden Frog & Crossing Works, Chicago.
Mudge & Co., Chicago.
Murdock Manufacturing & Supply Company, Cincinnati, Ohio.

National Boiler Washing Company, Chicago.
National Carbon Company, Inc., Cleveland, Ohio.
National Lead Company, New York City.
National Lock Washer Company, Newark, N. J.
National Malleable & Steel Castings Company, Cleveland, Ohio.
National Safety Appliance Company, Chicago.
National Vulcanized Fibre Company, Wilmington, Del.
Nelson Manufacturing Company, B. F., Minneapolis, Minn.
Nichols, George P,. & Brothers, Chicago.
Northwestern Motor Company, Eau Claire, Wis.

Ogle Construction Company, Chicago.
Ohio Brass Company, Mansfield, Ohio.
Okonite Company, Passaic, N. J.
Osgood Company, Marion, Ohio.
Oxweld Railroad Service Company, Chicago.

P. & M. Company, Chicago.
Page Steel & Wire Company, Bridgeport, Conn.
Patterson Company, W. W., Pittsburgh, Pa.
Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa.
Pocket List of Railroad Officials, New York City.
Portland Cement Association, Chicago.
Positive Rail Anchor Company, Marion, Ind.
Pyle-National Company, Chicago.

Q. & C. Company, New York City.

Railroad Accessories Corporation, New York City.
Railway Age, New York.
Railway Supply Company, Chicago.
Railway Purchases & Stores, Chicago.
Railway Review, Chicago.
Rail Joint Company, Chicago.
Ramapo Ajax Corporation, Hillburn, N. Y.
Reade Manufacturing Company, Jersey City, N. J.
Reliance Manufacturing Company, Massillon, Ohio.
Richards-Wilcox Manufacturing Company, Aurora, Ill.
Roberts, George J., Company, Dayton, Ohio.
Roberts & Schaefer Company, Chicago.
Robertson & Co., Williams, Chicago.

Sellers Manufacturing Company, Chicago.
Sherwin-Williams Company, Cleveland, Ohio.
Signal Accessories Corporation, Utica, N. Y.
Snow Construction Company, T. W., Chicago.
Southern Signal Company, Inc., Louisville, Ky.

Templeton-Kenly & Co., Ltd., Chicago.
Torchweld Equipment Company, Chicago.

Union Switch & Signal Company, Swissvale, Pa.
U. S. Wind Engine & Pump Company, Batavia, N. Y.

Verona Tool Works, Pittsburgh, Pa.

Warren Tool & Forge Company, Warren, Ohio.
Waterbury Battery Company, New York City.
Western Electric Company, Inc., Chicago.
Western Wheeled Scraper Company, Aurora, Ill.
Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.
William Wharton, Jr., & Co., Easton, Pa.
Wood Shovel & Tool Company, Piqua, Ohio.
Woolery Machine Company, Minneapolis, Minn.
Wright Manufacturing Company, Lisbon, Ohio.
Wyoming Shovel Works, Wyoming, Pa.

The secretary of the National Railway Appliances Association is C. W. Kelly, 825 South Wabash avenue, Chicago.

Traffic News

The Florida Citrus Exchange has sent 20,000 boxes of oranges and grape fruit from Tampa, Florida, to northern ports by the steamer Twin Cities.

A new daily train from Montreal and Toronto to Winnipeg was placed in service on December 4 by the Canadian Pacific. It makes a reduction in the running time between Montreal and Winnipeg and between Toronto and Winnipeg, in the former case of 7¼ hours and in the latter case by 4¼ hours.

The Chicago Great Western has chosen the name "Legionnaire" for its train operating between Chicago, St. Paul, and Minneapolis, formerly known as the Rochester-Twin City Limited. Suggestions for a new name were submitted to the number of 60,000. The name chosen was selected as a tribute to the men who served the nation in the World War.

The Traffic Club of New England, at its annual meeting in Boston on December 4, elected as president for the ensuing year F. W. Hunt, traffic manager of Chase & Sanborn. Vice-presidents: C. E. Mayer, W. T. Lyman, J. H. Lane, G. O. Sheldon; directors, Edward Dana, J. S. Hathaway, R. Van Ummersen, E. L. Wilson, C. R. Blades, G. H. Eaton, S. A. Colpitts.

Railroads comprising the Western, Mountain, Pacific and Southern rate groups which were segregated by a ruling of the Interstate Commerce Commission on July 9, 1921, filed a suit in the United States District Court at St. Paul, Minn., protesting against a reduction in express rates authorized under an order of the Interstate Commerce Commission on May 17, to become effective January 1, 1925.

The Atchison, Topeka & Santa Fe is equipping its California Limited, which operates between Chicago and the Pacific coast, with new cars; seven-room compartment cars, ten-section compartment and drawing room sleepers, compartment cars with three drawing rooms, and nine-section observation sleepers. A women's lounge, bath and smoking room will be featured; also maids, manicurists and hairdressers.

Local loadings on the Missouri Pacific during November totaled 99,423 cars or a 10.1 per cent increase over November, 1923. Receipts from connections totaled 35,034 cars, making the number of revenue freight cars moved in November 134,457. In the 11 months ending November 30 the total number of revenue freight cars handled was 1,397,120 cars which exceeded by 150,000 cars the previous high mark, made in 1917.

The enlarged freight terminal of the Manufacturers' Junction Railroad at 25th street and 48th avenue, Chicago, was formally opened on December 4 when Chicago traffic officers inspected the facilities. The Manufacturers' Junction operates a universal freight station at this point which it originally opened in 1906 and which on account of the increase in l. c. l. freight in that territory has required extensive enlargement.

Proposal to Accommodate Convention Dates

At a meeting of the International Association of Convention Bureaus and committees representing (*a*) the railroads in the territory west of Chicago, St. Louis, and the Mississippi river, and (*b*) railroads south of the Ohio and Potomac rivers, which was held at the Hotel Statler, Cleveland, Ohio, on November 17, 18 and 19, members of the International Association of Convention Bureaus, which is composed of men attached to the chambers of commerce and merchants' associations representing the principal cities in the United States, adopted a resolution to co-operate in a plan for avoiding conflicts in convention dates. The organization appointed a committee to co-operate with the railroads and the Pullman Company in working out the details of the methods the International Association of Convention Bureaus will employ in supporting the plan. They also elected E. L. Bevington, chairman of the Transcontinental Passenger Association, Chicago, to act as a clearing house for convention dates. This meeting followed a similar meeting held in Chicago on October 29 when the chairmen of the territorial passenger associations, west and south, and representatives of the Pullman Company, met with representatives of 21 of the larger organizations of the country and enlisted their co-operation in arranging conventions so as to relieve the serious handicap caused by conventions being held on dates so close together as to make it impossible for the railroad companies to offer adequate service.

At both meetings an opinion was expressed strongly favoring the movement but it developed that it would be impracticable for those associations which have already chosen their dates for 1925 to change them. However, it was decided that those whose dates had been fixed only tentatively would endeavor to avoid conflicts in 1925 and that if a central body should be established to deal with the question, communication should be had with those whose dates had been tentatively fixed, inviting their attention to the dates of conventions previously fixed; this with a view to inducing them to consider the avoidance of conflicts. It was further agreed that all organizations joining this movement should telegraph Mr. Bevington during their conventions, as to convention dates being fixed or proposed for the following year; Mr. Bevington then would advise the correspondent by wire of any dates previously selected so that the convention could reconsider the date if the first one selected should be found to conflict with that of any other organization.

Report of Committee on Co-ordination of Rail and Steamship Activities

Secretary Hoover, as chairman of the committee appointed by the President earlier in the year on co-ordination of rail and steamship activities reported on December 9 that the committee has given prolonged consideration to the problems presented to it, and has secured exhaustive examination of the questions involved, with the assistance of a sub-committee from the different departments and a special report by Stuart Daggett. At a meeting of the committee on December 6 it was resolved to place before the President the following conclusions:

1. *Section 28 of the Merchant Marine Act of* 1920.

We support the statement in the Presidential message to Congress "that action under this section should be suspended until Congress can reconsider the entire question in the light of the experience that has been developed since its enactment."

2. *Through Rail and Ocean Rates.*

Our export and import trade would be on a firmer basis if our exporters and importers, a large percentage of whom are from 500 to 1,000 miles from the seaboard, could know in advance and with reasonable certainty how much the transportation costs on their goods to and from foreign markets will be. It is desirable that the Shipping Board should investigate the possibility of more systematic quotation of through rail and ocean rates.

3. *Operation of Steamships by Railways.*

There should be no hindrance to railways undertaking the extension of their transportation systems by operation of overseas American flag shipping.

4. *Uniform Through Export Bill of Lading.*

The use of this document, prescribed by the Interstate Commerce Commission to be used in connection with American flag ships, should be encouraged and extended to all trades, and minor difficulties in connection with it should be adjusted to the end that more of our exports may find it advantageous to move in American ships.

5. *Package Car Service in Connection with American Ships.*

Both privately-owned and government-owned shipping lines should develop package car services in co-operation with our railroads so that our shipping lines may get more of the high-revenue-producing cargo which would be attracted by such special facilities.

6. *Publication of Sailing Lists by the Interstate Commerce Commission.*

The monthly publication and distribution of sailing lists in the interior by the I. C. C. serves no useful purpose owing to the uncertainties and alterations of such sailings. This should be discontinued as a useless waste of public money. Similar services by the railways and other agencies afford better facilities at the present time.

The members of the committee present and joining in this final recommendation were Chairman O'Connor of the Shipping Board, Chairman Hall of the Interstate Commerce Commission, President Palmer of the Emergency Fleet Corporation, President Willard of the Baltimore & Ohio Railroad, and Secretary Hoover. A. G. Smith, president of the American Ship Owners Association, was unavoidably absent and the report says that therefore it is not right to consider him as committed to these recommendations.

Commission and Court News

Interstate Commerce Commission

A hearing on the reduction of freight rates on oil shipments from northern Oklahoma fields to St. Louis, Mo., and points as far north as Minneapolis, Minn., was opened at the Hotel Chase, St. Louis, Mo., on December 3. On the first day testimony of railroad representatives was presented and the witnesses were cross-examined on existing rates from Oklahoma and north Texas to the territory between St. Louis and Minneapolis. On the second day the testimony of Iowa dealers was heard, which testimony supported the changes made by Kansas refiners against existing tariffs on crude and refined oil from the Oklahoma fields.

Personnel of Commissions

Sherman H. Stivers, Jr., for four years field supervisor of land valuation for the Interstate Commerce Commission, has resigned, effective December 6, to engage in private practice, at Washington, D. C., specializing in valuation cases. Mr. Stivers has been engaged in the valuation work for the commission ever since that work was started eleven years ago.

Commissioners Meyer and Campbell Reappointed

President Coolidge on December 8 sent to the Senate the nominations of B. H. Meyer and J. B. Campbell for reappointment as members of the Interstate Commerce Commission for seven-year terms beginning January 1, 1925. The Senate two days later confirmed the appointments.

Court News

Cinder in Eye—Railroad Not Negligent

The Mississippi Supreme Court holds that the excessive speed of a train was not the proximate cause of a cinder entering the eye of an automobilist waiting at a crossing, 30 ft. from the train, the evidence showing there was less likelihood of a cinder being thrown upon him at a speed of 15 miles an hour than if running at 5 miles an hour. The emission of a cinder the size of a pinhead is not negligence per se.—L. & N. v. Jones (Miss.) 98 So. 230.

Supreme Court of the United States

No Recovery for Death of Negligent Engineman

Action was brought under the federal Employers' Liability Act for the death of an engineman caused by a collision on a railway while under federal control between two trains No. 1 and No. 4, west of a point known as Shops west of Nashville, Tenn. [July 9, 1918.] The line is double track from Nashville to Shops, then single. Deceased was the engineer of No. 4, westbound. The conductor had told him that the train was crowded and had asked him to look out for No. 1, eastbound, which had right over No. 4, the crew of No. 4 having instructions not to pass Shops unless they knew as a fact that No. 1 had reached that point.

Judgment for plaintiff was affirmed by the Supreme Court of Tennessee on the ground that the other members of the crew as well as the engineer were bound to look out for No. 4 and that their negligence contributed as a proximate cause to the engineer's death.

The Supreme Court of the United States has reversed this judgment. The court says: "It was the personal duty of the engineer positively to ascertain whether the other train had passed. His duty was primary as he had physical control of No. 4, and was managing its course. It seems to us a perversion of the statute to allow his representative to recover for an injury directly due to his failure to act as required on the ground that possibly it might have been prevented if those in secondary relation to the movement had done more."—Davis v. Kennedy. Decided November 17, 1924. Opinion by Mr. Justice Holmes.

Labor News

Resolutions opposing the passage of the Howell-Barkley railroad labor bill, now pending in Congress, were passed by the Arkansas Petroleum Club on November 25.

The only hearing of importance held by the Railroad Labor Board during the past week was one on December 11 on proposed wage increases for train service employees of 11 roads situated in all parts of the country. The controversy was taken before the board by the Order of Railway Conductors and the Brotherhood of Railroad Trainmen. The railways involved were those which were not parties to the agreements which have already been made by most of the country's roads.

Dining Car Employees

The Railroad Labor Board has ordered elections held on the Chicago, Burlington & Quincy and the Southern to determine what organizations shall represent the dining car employees on the two roads. On the Burlington, the Railway Men's International Benevolent Industrial Association claims that it represents the waiters and cooks in dining car service, but recognition has been refused by the management. On the Southern a newly formed organization known as the Brotherhood of Dining Car Employees has likewise been denied recognition.

Pennsylvania Telegraphers Choose O. R. T. as Their Representative

The Order of Railroad Telegraphers has been chosen by the telegraph employees on the Pennsylvania as their representative in all wage disputes and other matters involving the employees and the management. The employees' wishes were determined in a secret election held by the Railroad Labor Board itself, the first election of its kind to be carried on by the board. The vote of 4,258 ballots for the Order of Railroad Telegraphers to 318 for the Pennsylvania system employees' representation delegates decisively indicated the telegraphers' disapproval of the latter organization.

The election was ordered by the board when the company and the employees failed to hold an election on the road itself in compliance with a Labor Board decision. The Labor Board sent out 7,760 ballots to the Pennsylvania telegraphers. The number of ballots returned to the board was 4,826. Some of the ballots were cast for other organizations, including other unions, individuals and the Railroad Labor Board itself, to represent the telegraphers.

Southern Pacific Enginemen Vote for Strike

Although 90 per cent of the engine service employees on the Southern Pacific have voted in favor of a strike, there is little likelihood of such action being taken, at least for some time. William Sproule, president of the Southern Pacific, has made arrangements with the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen & Enginemen, representing the employees, to hold an early joint conference. The strike vote was taken as a result of the refusal of the management to renew direct negotiations with the brotherhoods on their request for general wage increases. The Southern Pacific was only one of the large number of western railways which participated in the dispute on the question before the Railroad Labor Board, but was picked out by the brotherhood executives as the road on which concerted efforts to secure acquiescence to their demands might best be made. The decision of the Labor Board which awarded a wage increase to the employees of 5 per cent on condition that they accept a number of changes in working rules apparently has not affected the situation on the Southern Pacific. Developments on the Southern Pacific are being watched with great interest by the other roads involved in labor board decisions since the attitude of the brotherhoods toward the decision will be made known by the steps they take in the Southern Pacific case.

Foreign Railway News

German Steel Combine

All the important German steel manufacturers have formed a syndicate in order to present a united front to steel manufacturers in other countries, according to the Journal of Commerce (New York). The move is thought to be preliminary to a movement for a Franco-Belgian-German steel combine.

Argentine Government Railway Board Being Investigated

According to press reports from Buenos Aires, President de Alvear of Argentina has suspended the railway board pending an investigation of the manner in which its affairs have been conducted. Diverting funds to other purposes than those authorized by law is alleged.

British Enginemen Threaten Strike

Enginemen and firemen of the British railways affiliated with the Associated Society of Locomotive Engineers and Firemen (about two-thirds of those employed in engine service belong to this union—the remainder to the National Union of Railwaymen) have threatened to strike if the railway companies carry out in January one of the terms of the settlement of the strike last year—i. e., payment for mileage basis at 150 miles a day instead of 120.

The strike last January was not participated in by the employees belonging to the National Union of Railwaymen and under the settlement, which amounted to a defeat for the A. S. L. E. F., the mileage basis was to be increased to 140 in July and 150 in January.

American Concern to Construct Line in Central America

R. W. Hebard & Co., Inc., of New York, have secured a contract from the International Railways of Central America for the construction of the Salvador division of the extension to be built from San Salvador, capital of El Salvador, to Guatemala. Some 175 miles of new railway are embraced in this work, the greater part of which is of heavy semi-mountainous character, with a number of tunnels and long span bridges. The Guatemala section is now under construction by Keilhauer & Rodezno.

The completion of this line effects a connection of the Salvador railway system with that of Guatemala and gives the International Railways of Central America a through rail route between Puerto Barrios, Atlantic port of Guatemala, and La Union, Pacific port of Salvador.

Jamaicans Dissatisfied With Administration of Government Railway

Sir Samuel Wilson, governor of the British colony of Jamaica, invited the Legislature on November 19 to approve a vote for £20,000 expended on railway construction in excess of the amount stated in the contract, according to the Times (London).

Some elected members objected to the amount of the vote on the ground that the explanation of the excess expenditure was unsatisfactory. They said they desired to give the governor a "square deal" in the management of the colony's affairs, but they regretted that he had associated himself with the railway director by declaring in his speech on the previous day in opening the session that the director had been abused because he sought to safeguard the interests of the island. They wished the governor to understand that, for four years, the country had been dissatisfied with the Railway Director. It was not good for Jamaica or the Empire that a feeling of suspicion against the attitude of the home authorities in regard to the sending of officials to the colony should continue. All classes wanted to work in harmony with the governor, but the director must leave the colony.

The governor said he had no intention of hurting the feelings of the elected members by using the word "abuse" instead of "criticism." He appealed to the members, in the best interests of the colony, to bury the hatchet and get rid of the director on equitable terms. As governor, he was prepared to inquire into any statement supplied to him by the elected members as to the improper expenditure of money on railway construction. The vote before the council was exceptional and of an unforeseen nature. The house unanimously passed the vote.

The dissatisfaction of the elected members with Major L. Thomas, the director of the Railway Department, in regard to the management of the state-owned railway, has found frequent expression during the last three years and was a fruitful subject of contention between them and the late governor, Sir Leslie Probyn, the Times continues. On April 29 last they moved to strike out of the railway estimates the salary of the director as a protest against his retention in that post. The governor, however, acting under the powers of the constitution, declared the matter to be one of "paramount importance," and used his casting-vote in order to create a majority against the motion. Thereupon the elected members left the house in a body. Something in the nature of a crisis followed. The elected members prepared a telegram to be sent to the Secretary for the Colonies of Great Britain giving their view of the railway trouble and urging that, in the interest of safety, the governor and the director should depart early from the colony. A conference took place between them and Sir Leslie Probyn, who later announced that, as the result of the meeting, he had decided to telegraph to the Secretary of State of Great Britain to ask that a Royal Commission should be sent out to inquire into railway affairs and, in the meantime, the railway director would be granted leave. The council incident formed the subject of a question by Mr. Ormsby-Gore in the House of Commons on May 5 and J. H. Thomas, then Colonial Secretary, after replying that he proposed to defer consideration of the matter until he had received a full report, stated in answer to a supplementary question, that all the evidence showed that the railway director was a most capable and efficient official.

New Construction Projected in Australia

The premier of the State of South Australia, according to the Times (London), has announced the signing of an agreement with the Commonwealth government, subject to Parliamentary approval providing for the construction of a section of the proposed north-south transcontinental line from its present terminus at Oodnadatta, South Australia, northward to Alice Springs in the Northern Federal Territory. What is now constructed of the north-south transcontinental line (Port Augusta to Oodnadatta) is of 3 ft. 6 in. gage. The Commonwealth government may, under the agreement, either extend this line or build a new one of 4 ft. 8½ in. gage northward from the existing standard gage east-west transcontinental line at Tarcoola. Moreover, under the agreement, that section of the South Australian Railways (3 ft. 6 in. and 5 ft. 6 in. gage) between Port Augusta and Adelaide would be provided with a third rail so as to be able to handle trains from the east-west transcontinental line which is of standard gage.

Interior of Passenger Car Built Recently in England for Service in Argentina

Equipment and Supplies

Locomotives

THE MISSOURI PACIFIC is reported as having placed an order for 45 locomotives with the American Locomotive Company. This item has not yet been officially confirmed.

THE BOURNE FULLER COMPANY, Cleveland, Ohio, was incorrectly reported in the *Railway Age* of December 6 as inquiring for one switching locomotive. The company will not buy this equipment.

Great Northern Orders Locomotives Larger than Any Previous Type

THE GREAT NORTHERN, reported in the *Railway Age* of October 25 as inquiring for 3 simple Mallet type locomotives, has ordered from the Baldwin Locomotive Works 4 simple Mallet 2-8-8-2 type oil-burning locomotives. These locomotives will be the largest ever built; the weight of each engine and tender will be 450 tons.

Freight Cars

THE AMERICAN STEEL & WIRE CO. is inquiring for 14 gondola cars of 70-tons' capacity.

THE WESTERN PACIFIC is reported to have ordered 70 stock cars from the Pacific Car & Foundry Co.

THE UNION RAILROAD has ordered 500 hopper car bodies of about 50 tons' capacity from the Greenville Steel Car Company.

THE COLOMBIAN RAILWAY & NAVIGATION CO., Colombia, South America, has ordered 15 flat cars of 20 tons' capacity, from the Magor Car Corporation.

THE O'BRIEN BROTHERS SAND & GRAVEL CO., Port Washington, Long Island, N. Y., has ordered 4 hopper cars of 20 tons' capacity, from the Magor Car Corporation.

THE SINCLAIR REFINING COMPANY is inquiring for 15, three-compartment tank cars of 8,000 gal. capacity and 10, two-compartment tank cars of 6,000 gal. capacity.

THE ST. LOUIS SOUTHWESTERN, reported in the *Railway Age* of December 6 as having renewed its inquiry for 1,000 double-sheathed box cars of 40 tons' capacity, has ordered this equipment from the Mount Vernon Car Manufacturing Company.

Passenger Cars

THE MISSOURI PACIFIC is inquiring for 40 caboose cars.

THE ILLINOIS CENTRAL has ordered three parlor cars from the Pullman Car & Manufacturing Corporation.

THE NEW YORK CENTRAL is inquiring for 29 steel passenger motor car bodies, 59 ft. long, for suburban service.

THE MISSOURI PACIFIC is inquiring for 2 dining cars in addition to the 36 cars reported in the *Railway Age* of December 6.

THE LOUISVILLE & NASHVILLE is inquiring for four coaches 61 ft. 2 in. long, four partition coaches 61 ft. 2 in. long, four 70 ft. baggage cars, eight 70 ft. baggage and mail cars and two dining car shells.

THE NORTHERN PACIFIC, reported in the *Railway Age* of October 25 as inquiring for 10 coaches, 5 baggage, and 5 baggage and express cars, has ordered the coaches and baggage cars from the Pullman Car & Manufacturing Corporation.

THE CHICAGO & NORTH WESTERN, reported in the *Railway Age* of November 15 as inquiring for 24 coaches, 23 steel baggage cars and 3 combination baggage and mail cars, has ordered 11 baggage cars from the Pullman Car & Manufacturing Corporation, 12 baggage cars, 24 coaches and 3 combination baggage and mail cars from the American Car & Foundry Co.

Iron and Steel

THE BALTIMORE & OHIO is inquiring for 1,500 tons of steel for four bridges.

THE SOUTHERN PACIFIC has ordered 22,500 tons of rails from the Tennessee Coal, Iron & Railroad Company.

THE MISSOURI-KANSAS-TEXAS has ordered 850 tons of structural steel for car repair work from the Illinois Steel Company.

THE WESTERN PACIFIC has ordered 750 tons of structural steel for a bridge over the Snake river near Elko, Nev., from the Virginia Bridge & Iron Co.

THE INTERNATIONAL-GREAT NORTHERN has ordered 12,000 tons of structural steel for oil storage tanks from the Kansas City Structural Steel Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered 800 tons of structural steel for an elevator at Argentine, Kans., from the Kansas City Structural Steel Company.

Track Specialties

THE GREAT NORTHERN is inquiring for 2,000 tons of nuts and 1,500 tons of bolts.

THE WABASH has divided an order for 1,000,000 tie plates, 8,000 kegs of spikes and 2,000 kegs of bolts between the Illinois Steel Company and the Inland Steel Company.

THE BALTIMORE & OHIO has divided an order for 2,225,000 tie plates and 20,000 kegs of spikes and bolts between the United States Steel Corporation, the Jones & Laughlin Steel Corporation, the Bethlehem Steel Corporation and the Dilworth-Porter Company.

Signaling

THE CHICAGO RAPID TRANSIT COMPANY has ordered from the Union Switch & Signal Company an electro-pneumatic interlocking machine having five signal and six switch levers.

THE NEW YORK CENTRAL is planning to install interlocking at Voorheesville, N. Y., where the West Shore line of the Central crosses the main line of the Delaware & Hudson. The crossing at present is equipped with a wooden gate.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company an electro-mechanical interlocking machine for Maple Grove, Ohio; 21 electric levers and 24 mechanical levers; also extensive additions for the existing machine at "J" Tower, Unionville, Ohio.

FREIGHT CAR REPAIR SITUATION

1924	Number freight cars on line	Cars awaiting repairs			Per cent of cars awaiting repairs
		Heavy	Light	Total	
January 1	2,279,363	118,653	39,522	158,175	6.9
February 1	2,269,230	115,831	45,738	161,569	7.1
March 1	2,262,254	119,505	49,277	168,782	7.5
April 1	2,274,750	125,932	46,815	172,747	7.6
May 1	2,271,638	131,609	47,666	179,275	7.9
June 1	2,280,295	138,536	50,683	189,219	8.3
July 1	2,279,826	144,912	49,957	194,869	8.5
August 1	2,278,773	153,725	49,139	202,864	8.9
September 1	2,296,589	158,200	51,909	210,109	9.2
October 1	2,304,020	157,455	48,589	206,044	8.9
November 1	2,313,316	150,703	39,840	190,543	8.2

Month	Cars repaired		
	Heavy	Light	Total
December	87,758	2,073,280	2,161,038
January	76,704	2,083,583	2,160,287
February	70,056	2,134,781	2,204,837
March	77,365	2,213,158	2,290,523
April	75,352	2,074,629	2,149,981
May	73,646	2,130,284	2,203,930
June	70,480	1,888,899	1,959,379
July	72,347	1,567,430	1,639,777
August	71,863	1,420,482	1,492,345
September	74,295	1,372,277	1,446,572
October	87,008	1,446,822	1,533,830

Supply Trade News

M. T. Lothrop has been appointed vice-president of the **Timken Roller Bearing Company,** Canton, Ohio.

The Link-Belt Company, Chicago, has opened a warehouse and office at 5938 Linsdale avenue, Detroit, Mich.

The Wine Railway Appliance Company, Toledo, Ohio, will construct a plant in that city to cost approximately $150,000.

The Chicago Varnish Works, Chicago, Ill., will in the future be operated under the name of **E. I. du Pont de Nemours & Co.—Chicago Works.**

J. B. Marks, purchasing agent of the **Colorado Fuel & Iron Co.,** with headquarters at Denver, Colo., has also been appointed assistant to the president.

Benjamin P. Lane has been appointed local manager of the newly opened branch office and warehouse of the **Sullivan Machinery Company** at Los Angeles, Calif.

Hambleton & Co. and Hornblower & Weeks announce the closing of subscription books on 200,000 shares of **The Symington Company** Class "A" stock and 66,666 shares of common.

The Union Metal Products Company will expend $500,000 for the remodeling of its plant at Hammond, Ind., which it recently acquired from the Keith Railway Equipment Company.

P. Blair Lee, who has been engaged in special work for the vice-president and general manager of **Birdsboro Steel Foundry & Machine Company,** Birdsboro, Pa., has been appointed works manager.

R. D. Allrich, western sales manager of the **Blaw-Knox Company,** has been appointed sales engineer of the **Superior Supply Company,** Chicago, distributors of railway and industrial contractors equipment.

The Milburn Sales Company, distributors in the Philadelphia territory for the Alexander Milburn Company, Baltimore, Md., makers of oxy-acetylene welding and cutting apparatus and portable carbide lights, has taken over the Metropolitan New York district with headquarters at 309 Fifth avenue. **E. P. Boyer, D. Keyser** and other assistants will be in charge of the New York City office.

E. A. Thornwell has been appointed representative of the **Premier Staybolt Company,** Pittsburgh, Pa., in the southeastern district, with headquarters in the Candler building, Atlanta, Ga., and **E. B. Corbett** has been appointed representative in the southwestern district, with headquarters at the corner of Sawyer and Winter streets, Houston, Texas. The company was previously without representation in these districts.

J. B. Odell, manager of the New York telephone distributing house of the **Western Electric Company,** New York, has been appointed assistant to the president of the company. Mr. Odell has been in the service of the Western Electric Company since 1904. He served in 1909 as head of the equipment division of the telephone department at New York, and the following year became assistant manager. He later was manager at Richmond, Va., before becoming manager of the New York house.

The W. Horace Williams Company, Inc., engineers and general contractors, has been organized with office at 816 Howard avenue, New Orleans, La. **W. Horace Williams** is president; **J. L. V. Grenier, C. G. Cappel** and **R. E. Gosa** are vice-presidents; **A. T. Gomila,** treasurer, and **Roland A. Thomas,** secretary of the new company. W. Horace Williams is also president and general manager of Doullut & Williams Company, Inc.; this latter corporation is to be dissolved and the majority of the engineering, office and field organization of Doullet & Williams Co., Inc., will serve with the new company.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company is calling for bids for the construction of an addition to the eating house at Arkansas City, Kan., to cost $40,000. This company has closed bids for the construction of a passenger station at Enid, Okla., reported in the *Railway Age* of November 29. The Santa Fe also plans to continue the double-tracking of its main line by the construction, next year, of a second track between Gallup, N. Mex., and Winslow, Ariz., a distance of over 100 miles.

ILLINOIS CENTRAL.—This company has closed bids for the construction of a one-story brick freight station, 462 ft. long, at Indianapolis, Ind., reported in the *Railway Age* of December 6.

MISSOURI PACIFIC.—This company has closed bids for the construction of an oil station at Smackover, Ark., reported in the *Railway Age* of December 6.

NEW YORK, CHICAGO & ST. LOUIS.—This company is reported to have awarded a contract to Green & Sawyer, Lima, Ohio, for the construction of a one-story machine shop extension, 68 ft. by 82 ft., at Lima.

NEW YORK, NEW HAVEN & HARTFORD.—This company has awarded a contract for the erection of a 3-stall enginehouse at Fitchburg, Mass.

NORFOLK & WESTERN.—This company has under construction extensions to its machine shops at Roanoke, Va., and Portsmouth.

PACIFIC FRUIT EXPRESS.—This company has closed bids for the construction of a refrigerator car repair shop, paint shop and stores shed at Nampa, Idaho, to cost $450,000, reported in the *Railway Age* of November 29.

PENNSYLVANIA.—This company has awarded a contract to Battey & Kipp, Inc., Chicago, for the construction of an engine house and repair shop at Toledo, Ohio, to cost approximately $500,000.

WABASH.—The Missouri Supreme Court has ruled against the plan of the Wabash for the elimination of the grade crossing at Delmar boulevard, St. Louis, Mo., and has upheld the order of the Missouri Public Service Commission, approving the plan of the city of St. Louis. The city's plan calls for the depression of the railroad tracks and the building of a viaduct to carry Delmar boulevard over them, the city to pay 40 per cent and the Wabash 60 per cent of the estimated total cost of $538,000.

WINSTON-SALEM TERMINAL.—This company has awarded a contract to the North-Eastern Construction Company, Charlotte, N. C., for the construction of a three-story passenger station, 110 ft. by 120 ft., at Winston-Salem, N. C., to cost $800,000.

Final Agreement on Toronto Viaduct

A race against time marked the final stages of completing the agreement between the city of Toronto and the Toronto Harbor Board, on the one hand, and the Canadian National and Canadian Pacific, on the other, for the construction of the viaduct from the east end of that city to the new union station on the waterfront. At midnight on Tuesday of this week the powers conferred by the legislation of the last session of the federal Parliament expired so that a vast amount of work had to be done in the last few days.

Without a dissenting voice the Toronto City Council approved the agreement which had already been passed by the Harbor Board. Then the signatures of Mayor W. W. Hiltz and Chairman T. L. Church of the Harbor Board were affixed to the document. On Saturday it was sent to Montreal where it was signed by the representatives of the two railways. On Monday it went to Ottawa where an Order in Council based on it was considered and approved by the federal Cabinet. On Tuesday of this week it was finally signed by Lord Byng, the Governor-General. Works Commissioner R. C. Harris of Toronto told the City Council that the total cost of the viaduct would be $28,476,172, according to the plans of Col. A. E. Dubuc, chief engineer of the Department of Railways and Canals.

Railway Financial News

ARIZONA EASTERN.—*Lease to S. P.*—The Southern Pacific has taken over, under lease, the 383 miles of the Arizona Eastern, which will be operated hereafter as a part of the Pacific system of the Southern Pacific. Traffic balances, car rentals, shop and car repair charges, and other accounts due to or from the Arizona Eastern and not settled with that company on or before December 31, will be settled with the Southern Pacific, through its general office in San Francisco, Cal. The Interstate Commerce Commission approved this lease in October, 1924.

BANGOR & AROOSTOOK.—*Stock.*—The Interstate Commerce Commission has authorized an issue of 72,200 shares of common stock of a par value of $50 each, in exchange for 36,600 shares of a par value of $100.

BUFFALO, ROCHESTER & PITTSBURGH.—*Acquisition.*—This company and the Allegheny & Western have applied to the Interstate Commerce Commission for authority for the acquisition by the latter and the operation by the B. R. & P., of the Rural Valley.

CANADIAN PACIFIC.—$30,000,000 *Issue.*—A syndicate consisting of the Bank of Montreal, Royal Bank of Canada, Canadian Bank of Commerce, National City Company, Ltd., Wood, Gundy & Co., A. E. Ames & Co., and Dominion Securities Corporation has sold $30,000,000 Canadian Pacific 20-year 4½ per cent sinking fund note certificates. Principal and interest are payable at any branch of the Bank of Montreal in Canada only.

Member of Executive Committee.—W. N. Tilley, K. C. of Toronto, has been appointed a member of the executive committee of the Canadian Pacific board to fill the vacancy caused by the death of Sir Edmund Osler.

CAROLINA WESTERN.—*Certificate.*—This company has applied to the Interstate Commerce Commission for a certificate to operate in interstate commerce a line from St. Stephens to Halls, S. C., 6 miles, heretofore privately operated by a manufacturing company.

CHICAGO, ROCK ISLAND & PACIFIC.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to sell $1,000,000 of first and refunding mortgage bonds, the issue of which was heretofore authorized, at not less than 84½.

CHICAGO UNION STATION COMPANY.—*Bonds.*—The Interstate Commerce Commission has modified its order which authorized this company to issue $850,000 of bonds by withdrawing the requirement that they be sold on competitive bids. The company had proposed to sell the bonds to Kuhn, Loeb & Co.

DETROIT & MACKINAC.—*Abandonment.*—The Interstate Commerce Commission has authorized the abandonment of a branch from Tower to Le Grand, Mich., 9.1 miles.

DETROIT, BAY CITY & WESTERN.—*Notice of Sale.*—Willis H. Ogborn, receiver, has issued a notice stating that this property will be offered for public sale on December 17, 1924, in Bay City, Mich., at ten o'clock a. m., central standard time.

Said sale will be conducted by William S. Sayres, Jr., special master in chancery, under an order of the United State District Court in the suit entitled First Trust and Savings Bank and Louis Boisot, vs. Detroit, Bay City & Western, et al.

The following property will be offered for sale: 97 miles of standard gage main line railroad, including right-of-way, between Bay City, Mich., and Westover, together with 14 miles of sidetracks, also station buildings, equipment, shop buildings, machinery, and office equipment, etc.

No bid accepted for said property as whole of less than $200,000, nor less than $2,500 per mile if sold in sections, nor less than $7,500 per mile for Bay City Terminals.

HUNTINGDON & BROAD TOP MOUNTAIN.—*Notes.*—The Interstate Commerce Commission has authorized an issue of $993,628 of 6 per cent promissory notes in liquidation of unfunded indebtedness outstanding.

INTERSTATE.—*Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue $175,516 of capital stock in addition to $3,000,000 recently authorized, to meet the excess cost of the construction of an extension beyond the amount estimated when authority for the issue was asked.

ILLINOIS CENTRAL.—*Equipment Trust.*—The Interstate Commerce Commission has authorized an issue of $12,945,000 of equipment trust certificates to be sold at not less than 97⅛.

KEOKUK & DES MOINES.—*Exchange of Bonds.*—F. J. Lisman, chairman of the bondholders' protective committee for Keokuk & Des Moines 5 per cent bonds, which defaulted payment October 1, 1923, announces that the parties entitled thereto can now receive their Chicago, Rock Island & Pacific 4 per cent bonds, together with back interest. The Farmers Loan & Trust Company, 22 William street, New York, is depositary.

MAINE CENTRAL.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue and sell $4,000,000 of first and refunding mortgage 5½ per cent bonds to retire $3,123,000 of notes to the goevrnment and to reimburse the treasury for expenditures for retiring bonds of subsidiaries. It is proposed to sell $1,000,000 of the bonds to Kidder, Peabody & Co., at 97, and that firm has an option to buy the balance at the same price.

MISSISSIPPI SOUTHERN.—*Lease.*—The Interstate Commerce Commission has authorized the Edward Hines Yellow Pine Trustees, operating this road, to acquire control by lease of that part of the line of the Gulf & Ship Island from Lumberton to Maxie, Miss., 16 miles.

MUSKEGON RAILWAY & NAVIGATION COMPANY.—*Purchase of Controlling Interest.*—A controlling interest in this company, which operates a belt line in Muskegon, Mich., and Muskegon Heights, connecting with the Pere Marquette, the Pennsylvania and the Grand Trunk, has been taken over by the Grand Trunk. It is believed that the transaction will result in the establishment of car ferry service from Muskegon to Milwaukee, Wis.

NEW YORK CENTRAL.—*R. S. Lovett Resigns.*—R. S. Lovett, chairman of the board of directors of the Union Pacific, has resigned as a member of the finance committee of the New York Central. He has been succeeded by C. B. Seger, chairman of the finance committee of the Union Pacific.

NORFOLK & WESTERN.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $6,000,000 of 5 per cent equipment trust certificates to be sold at not less than 95½.

OAKDALE & GULF.—*Abandonment.*—The Interstate Commerce Commission has issued a certificate authorizing the abandonment of operation of a line from Godwin to Caney, La., 2.31 miles.

PENNSYLVANIA.—*Valuation.*—Hearing on the protests of the carriers against the tentative valuation reports on the property of the Vandalia and the Pittsburgh, Cincinnati, Chicago & St. Louis, having been set for December 4 at Washington before Commissioner Lewis and Examiner Gibson, it was decided to refer the case to conference under the shortened procedure plan recently authorized by the commission for experiment in two cases. The conference will be between the technical representatives of the commission and of the carriers with a view to clarification and simplification of the issues, elimination of immaterial matters and the reaching of agreements or the preparation of statements of fact on technical issues, which it is hoped will materially shorten the time required for hearings. The conference is divided into three branches, accounting, engineering and land, and is being carried on under the direction of the supervisors of those branches of the work of the Bureau of Valuation.

PITTSBURGH & WEST VIRGINIA.—*Equipment Trust.*—This company has been authorized by the Interstate Commerce Commission to assume obligation and liability in respect of $3,000,000 of equipment trust certificates to be sold at not less than 97.109.

PORTLAND TERMINAL COMPANY.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of $1,800,000 of first mortgage 5 per cent gold bonds to be guaranteed by the Maine Central, the proceeds to be used to retire coupon notes.

READING.—*Bond Exchange.*—Without issuing a formal order the United States District Court has authorized this company in its discretion until further notice to accept Reading general mortgage bonds for exchange into new bonds of the Reading Company and the Reading Coal Company. Under this informal ruling

the Reading Company has received $1,000,000 additional bonds for exchange, leaving outstanding only $2,000,000 out of the $94,266,000 outstanding at time segregation plan became effective.

Bonds are being accepted by Reading Company, in cases where holders did not make the exchange within time limit from lack of knowledge of details, lack of signatures, absence from home, authority required by those acting in a fiduciary capacity and similar reasons. Time for exchange expired on October 10, having been extended from April 10. Holders of general mortgage bonds are given two-thirds of their holdings in 4½ per cent bonds of Reading Company and one-third in 5 per cent bonds of the coal company.

SAN ANTONIO & ARANSAS PASS.—*Acquisition.*—See Southern Pacific.

SEABOARD AIR LINE.—*Bonds.*—Freeman & Co. and Redmond & Co. are offering $3,390,000 equipment trust 5 per cent certificates, due serially 1925 to 1940 inclusive, at prices to yield from 4 per cent to 5.15 per cent.

SOUTHERN PACIFIC.—*Acquisition.*—This company and the Galveston, Harrisburg & San Antonio have jointly applied to the Interstate Commerce Commission for authority to acquire control of the San Antonio & Aransas Pass by purchase of its stock by the Southern Pacific and by lease to the G. H. & S. A. The Southern Pacific, which already controls the road, proposes to purchase 9,854 shares, of a total of 10,000 shares outstanding, for $236,560.50.

Arizona Eastern Lease.—See item above.

ST. LOUIS, ROCKY MOUNTAIN & PACIFIC.—*Common Dividend Resumed.*—This company has declared a dividend of 1 per cent on the common stock, payable December 31, to stock of record December 15. The dividend was passed December 27, 1923. The regular quarterly dividend of 1¼ per cent was declared on the preferred stock, payable December 31 to stock of record December 15.

TAMPA & GULF COAST.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $434,000 of first mortgage bonds.

WABASH.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $4,391,000 of 5 per cent equipment trust certificates to be sold to Kuhn, Loeb & Co., at 98.8. These certificates have been placed privately, as noted in last week's *Railway Age.*

WASHINGTON SOUTHERN.—*Valuation.*—The Interstate Commerce Commission has issued a tentative valuation report placing the final value of the carrier property owned as of June 30, 1916, at $7,040,219.

Dividends Declared

Bangor & Aroostook.—Common, 75 cents quarterly, payable January 1 to holders of record December 20.

Chicago, North Shore & Milwaukee.—Preferred, 1½ per cent, quarterly; prior lien preferred, 1¾ per cent, quarterly; both payable January 1 to holders of record December 17.

Lehigh Valley.—Common, 87½ cents, quarterly; preferred, $1.25, quarterly; both payable January 2 to holders of record December 13.

Northern Central.—$2.00, semi-annually, payable January 15 to holders of record December 31.

Pere Marquette.—Common, 1 per cent, quarterly, payable January 2 to holders of record December 15. Prior preference, 1¼ per cent, quarterly; five per cent preferred, 1¼ per cent, quarterly; both payable February 2 to holders of record January 12.

St. Louis, Rocky Mountain & Pacific.—Common, 1 per cent; preferred, 1¼ per cent, quarterly; both payable December 31 to holders of record December 15.

St. Louis, San Francisco.—Common (initial), 1¼ per cent, payable January 15 to holders of record January 2; preferred, $1.50, quarterly, payable February 2, May 1, August 1 and November 2.

Virginian.—Common, 4 per cent, payable December 31 to holders of record December 20.

Western Pacific.—Preferred, $1.50, quarterly, payable January 5 to holders of record December 23.

Trend of Railway Stock and Bond Prices

	Dec. 9	Last Week	Last Year
Average price of 20 representative railway stocks	79.98	79.03	60.15
Average price of 20 representative railway bonds	89.06	89.14	82.83

Railway Officers

Executive

M. H. Cahill, vice-president and general manager of the Seaboard Air Line, with headquarters at Norfolk, Va., has been elected also vice-president of the Tampa & Gulf Coast.

Operating

H. H. Hill has been appointed general manager of the Alabama, Florida & Gulf, with headquarters at Dothan, Ala., succeeding J. B. Bivings, resigned.

J. M. Cardwell has been appointed trainmaster of the Sacramento division of the Southern Pacific, with headquarters at Roseville, Cal., succeeding W. B. Kirkland, whose promotion to assistant superintendent of the Rio Grande division was reported in the *Railway Age* of November 8.

Max Fiedler, superintendent of the Globe division of the Arizona Eastern, with headquarters at Globe, Ariz., has resigned to become superintendent of the rail division of the Inspiration Consolidated Copper Company, with headquarters at Miami, Ariz.

Frank I. Snyder, whose appointment as general manager of the Bessemer & Lake Erie, with headquarters at Pittsburgh, Pa., was announced in the *Railway Age* of November 22, was born at Greenville, Pa., on December 12, 1883. He was educated in the public and high schools of Greenville and in 1903 he completed a business college course in Pittsburgh. He entered railway service in October, 1903, as a stenographer in the assistant trainmaster's office of the Pennsylvania at Pittsburgh and in December, 1904, he entered the traffic department of the Carnegie Steel Company. From June, 1905, to May, 1906, he was in the service of the Pennsylvania, Lines West, in the office of the general superintendent of passenger transportation. He entered the service of the Bessemer & Lake Erie in May, 1906, in the office of the vice-president and general manager and served successively as stenographer and clerk, secretary, chief clerk and assistant general manager, the position he held at the time of his appointment as general manager. During the period of federal control Mr. Snyder served as assistant to the federal manager.

F. I. Snyder

J. R. Todd, superintendent of the Michigan division of the New York Central, with headquarters at Elkhart, Ind., has been transferred to the Illinois division, with headquarters at Gibson, Ind., succeeding H. A. Ziesel, who died on November 7. **W. P. Lamb,** assistant superintendent of the Western division, with headquarters at Chicago, has been promoted to superintendent of the Michigan division, with headquarters at Elkhart, succeeding Mr. Todd. **J. P. Smilie** has been appointed assistant superintendent of the Western division, with headquarters at Chicago, succeeding Mr. Lamb.

C. H. Dunaway, whose promotion to superintendent of the Northern Kansas division of the Missouri Pacific, was reported in the *Railway Age* of November 29, was born on July

17, 1883, at Chandlerville, Ill. He entered railway service in March, 1900, as an operator on the Central Kansas division of the Missouri Pacific, and held that position until September, 1907, when he was promoted to train dispatcher. He was promoted to chief dispatcher of the Central Kansas division in November, 1916, and in November, 1919, was promoted to trainmaster of the same division. Mr. Dunaway was promoted to assistant superintendent of the Omaha division in October, 1924, and continued in that capacity until his recent promotion to superintendent of the Northern Kansas division. His headquarters are at Atchison, Kans.

G. W. Briece, whose promotion to assistant to the general manager of the Missouri Pacific, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of November 29, was born on January 3, 1873, at Quincy, Ill. He entered railway service in July, 1892, as a clerk in the car accounting department of the Missouri-Kansas-Texas and later served in various capacities in that and the transportation departments. He entered the service of the Missouri Pacific in December, 1902, as a clerk in the transportation department and later was promoted to passenger car distributor and chief clerk to the superintendent of transportation. Mr. Briece was promoted to car accountant in October, 1913, and held that position until July 1, 1918, when he was appointed supervisor of transportation in the office of the regional director under the United States Railroad Administration. On March 1, 1920, when the railroads were released from government operation, he was appointed superintendent of transportation, with headquarters at St. Louis, and remained in that position until his recent promotion to assistant to the general manager.

G. W. Briece

Robert Faries, whose promotion to superintendent of the Buffalo division of the Pennsylvania, with headquarters at Buffalo, N. Y., was announced in the *Railway Age* of November 22, was born at Bellwood, Pa., on November 30, 1881. He was educated in the public and high schools of Bellwood and also attended the high school at Altoona, Pa., and entered the service of the Pennsylvania on May 5, 1899, as a rodman in the supervisor's office at Gallitzin, Pa. After serving several years as a rodman on the Pittsburgh division, during which time he was in charge of the engineering work in connection with the constructing of the terminal yards and facilities at Pittsburgh, Pa., he was appointed transitman at Altoona on February 1, 1902, and in May of that year he was appointed assistant supervisor at Brownsville, Pa. He was transferred to the Philadelphia Terminal division in the same capacity on November 1, 1903, and on August 1, 1905, he was appointed supervisor of the Camden & Amboy (now a part of the Pennsylvania) at Jamesburg, N. J. He subsequently served in that capacity at Trenton, N. J., Washington, D. C., and Baltimore, Md., and on June 1, 1917, he was promoted to division engineer at Elmira, N. Y. He later served in that capacity at Williamsport, Pa., and at Pittsburgh, in which capacity he was serving at the latter place at the time if his promotion to superintendent of the Buffalo division.

Traffic

W. F. Miller has been appointed division passenger agent of the Missouri Pacific, with headquarters at St. Louis, Mo., succeeding J. M. Griffin, deceased.

E. C. Ash has been appointed assistant general freight agent of the Alabama, Tennessee & Northern, with headquarters at Mobile, Ala. He will report to the president of the company who is directing traffic.

R. D. Schott has been appointed division freight agent of the New York Central, with headquarters at Youngstown, Ohio, a newly created position.

J. V. Atkinson, general agent for the Mississippi-Warrior River Service, with headquarters at Memphis, Tenn., has been appointed commercial freight agent for the Buffalo, Rochester & Pittsburgh, with the same headquarters.

J. M. Fulton, assistant general freight and passenger agent of the Southern Pacific, with headquarters at Reno, Nev., will retire from active service on January 1. Mr. Fulton has been engaged in railway service for 57 years, 46 of which were with the Southern Pacific.

Fred H. Booth has been appointed general agent for the Louisiana & Arkansas, with headquarters at Pittsburgh, Pa., succeeding Robert Hunter, resigned, to accept service with another company. **L. B. Kelz** has been appointed general agent, with headquarters at New York, a newly opened office.

C. B. Ogle has been appointed general agent, passenger department, of the Chicago, Burlington & Quincy, with headquarters at St. Louis, Mo., succeeding **J. G. Delaplaine,** whose promotion to manager of the tour bureau, with headquarters at Chicago, was reported in the *Railway Age* of November 1.

C. A. Maull, commercial agent of the Atlantic Coast Line, with headquarters at Miami, Fla., has been promoted to general agent, with the same headquarters, a newly created position. **M. H. Dorsett,** commercial agent, with headquarters at Palmetto, Fla., has been promoted to general agent, with the same headquarters, also a newly created position. **W. M. Brooks,** traveling freight agent, with headquarters at Miami, Fla., has been promoted to commercial agent, with the same headquarters, succeeding Mr. Maull. **N. B. Camp** has been appointed commercial agent, with headquarters at West Palm Beach, Fla. **E. P. Johnson** has been appointed commercial agent, with headquarters at Lake Wales, Fla.

Mechanical

A. R. Sykes, assistant mechanical inspector of the Missouri Pacific, with headquarters at St. Louis, Mo., has been promoted to master mechanic of the newly created Little Rock division, with headquarters at McGehee, Ark.

The headquarters of **R. H. Baker,** whose appointment as mechanical engineer of the Chicago Great Western was reported in the *Railway Age* of December 6, are at Oelwein, Iowa, instead of Chicago, as reported in that issue.

W. W. Walker, master mechanic of the Slaton division of the Panhandle & Santa Fe, with headquarters at Slaton, Tex., has been transferred to the Pecos division of the Atchison, Topeka & Santa Fe, with headquarters at Clovis, New Mex., succeeding M. H. Haig, whose death on November 10 was announced in the *Railway Age* of November 22. **G. R. Miller** has been appointed master mechanic of the Slaton division of the Panhandle & Santa Fe, with headquarters at Slaton, Tex., succeeding Mr. Walker.

F. T. Huston, master mechanic of the Buffalo division of the Pennsylvania, with headquarters at Olean, N. Y., has been transferred to the Renovo division, with headquarters at Erie, Pa., succeeding **J. B. Kapp,** transferred. **B. M. Swope,** master mechanic of the St. Louis division, with headquarters at Terre Haute, Ind., has been transferred to the Buffalo division, succeeding Mr. Huston. **P. M. Cheesman,** master mechanic of the Wheeling division, with headquarters at Mingo Junction, Ohio, has been transferred to the St. Louis division, succeeding Mr. Swope. **J. T. Leach,** assistant master mechanic of the Eastern division, has been promoted to master mechanic of the Wheeling division, succeeding Mr. Cheesman.

Engineering, Maintenance of Way and Signaling

J. S. Bassett, assistant division engineer of the Central Kansas & Colorado division of the Missouri Pacific, with head-

quarters at Hoisington, Kans., has been promoted to division engineer of the newly created Little Rock division, with headquarters at McGehee, Ark.

R. Swenk, supervisor of track of the Pennsylvania, with headquarters at Paoli, Pa., has been promoted to division engineer, with headquarters at Pittsburgh, Pa., succeeding **Robert Faries** of the Pennsylvania, whose promotion to superintendent of the Buffalo division was noted in the *Railway Age* of November 22.

B. Herman, assistant to the vice-president of the Southern, with headquarters at Washington, D. C., has been promoted to chief engineer, succeeding T. H. Gatlin, resigned. **H. J. Haar, Jr.,** assistant engineer of maintenance, with headquarters at Danville, Va., has been promoted to office engineer, Lines East, with headquarters at Charlotte, N. C., succeeding **G. P. Asbury,** whose promotion to engineer maintenance of way of the Northern district, was announced in the *Railway Age* of December 6.

Purchasing and Stores

J. W. Cockrill has been appointed division storekeeper of the Illinois Central, with headquarters at Clinton, Ill., succeeding R. E. Downing, who has resigned to engage in other business.

Special

Dr. W. J. Black, European manager of Canadian National, has been promoted to the newly created position of director of colonization and development, with headquarters at Montreal. The creation of this position was rendered necessary by the decision of the company to pursue an active policy of obtaining people of the best possible type from the British Isles and from certain sections of the continent of Europe for colonists in Canada.

Obituary

E. E. Hart, consulting engineer of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, died in that city on December 4. An outline of Mr. Hart's railway career appeared in the *Railway Age* of February 16, 1924.

Dr. James Mills, for ten years a member of the Dominion Railway Board and for the last ten years librarian for that body, died in Ottawa last week, aged 84 years. He was born in Ontario and received his later education at Victoria University, then located at Coburg, Ontario. After a brief teaching experience in high schools he became president of the Ontario Agricultural College at Guelph, which post he held for 25 years. Then in 1904 he was named a member of the Dominion Board of Railway Commissioners. In 1914 he was retired to the position of librarian of the Board. For 16 years he was a member of the Senate of the University of Toronto, and in 1899 he was appointed a member of the San Jose Scale Commission.

W. C. Brown, formerly president of the New York Central, who retired from active service on January 1, 1914, died at Pasadena, Cal., on December 6. Mr. Brown was born on July 29, 1853, in Herkimer county, N. Y., and entered railway service in June, 1869, as a sectionman on the Chicago, Milwaukee & St. Paul. He was appointed a telegraph operator in March, 1870, and held that position until June, 1872, when he was appointed train dispatcher on the Illinois Central. Mr. Brown was appointed a train dispatcher on the Chicago, Rock Island & Pacific in March, 1875, and in June of the following year was appointed a train dispatcher on the Chicago, Burlington & Quincy. He was promoted to chief train dispatcher in January, 1880, and to trainmaster in January, 1881. Mr. Brown was promoted to assistant division superintendent in July, 1884; and held that position until January, 1887, when he was promoted to division superintendent. In August, 1890, he was promoted to general manager of the Hannibal & St. Joseph and the Kansas City, St. Joseph & Council Bluffs, now a part of the Burlington, and in May of the following year, was appointed also general manager of the Chicago, Burlington & Kansas City and the St. Louis, Keokuk & Northwestern. He was promoted to general manager of the Chicago, Burlington & Quincy in January, 1896, and continued in that capacity until July, 1901, when he was appointed general manager of the Lake Shore & Michigan Southern, now a part of the New York Central. Mr. Brown was elected vice-president of the New York Central & Hudson River and the Lake Shore & Michigan Southern in February, 1902. In February, 1905, he was elected vice-president also of the Michigan Central, the Cleveland, Cincinnati, Chicago & St. Louis and other subsidiaries of the New York Central. He was elected senior vice-president of the New York Central lines on June 1, 1906, and on February 1, 1909, was elected president. Mr. Brown held the latter position until his retirement from active service in 1914.

Robert C. Wright, general traffic manager of the Pennsylvania, with headquarters at Philadelphia, Pa., died suddenly in his office on December 6. Mr. Wright was born in Rio de Janeiro, Brazil, on December 5, 1869, and was educated in the public schools of Baltimore, Md., and in the Baltimore City College. He entered railway service in March, 1888, as a messenger and clerk at Patterson's Wharf station of the Northern Central (now a part of the Pennsylvania) at Baltimore, and in December, 1889, he became a clerk in the general agent's office at Baltimore. From June 1, 1897, to December 31, 1898, he was soliciting agent of the Star Union Line and from January 1 to May 1, 1899, he was special agent of transportation of the Pennsylvania. He was then promoted to division freight agent of the Pennsylvania at Altoona, Pa., and in January, 1901, he was transferred to Harrisburg, Pa. He was promoted to assistant general freight agent on June 1, 1903, and on March 1, 1906, he was promoted to general freight agent in charge of local freight at Philadelphia. Mr. Wright was promoted to freight traffic manager on May 8, 1912, and upon a change in the organization of the company in May, 1916, he was appointed to the newly created position of traffic manager of the Lines East of Pittsburgh and Erie, with supervision over both freight and passenger traffic. In February, 1918, Mr. Wright was appointed assistant director, division of traffic, of the United States Railroad Administration and at the termination of federal control in March, 1920, he was appointed general traffic manager, with supervision over all traffic of the Pennsylvania, the position he held at the time of his death.

R. C. Wright

B. N. Austin, formerly general passenger agent of the Baltimore & Ohio, who retired from active service on March 1, 1920, died in Chicago on December 5. Mr. Austin was born on September 5, 1856, at Milwaukee, Wis., and was educated at the Royal Academy at Berlin, Germany. He entered railway service in 1874 as a general office clerk on the Chicago, Milwaukee & St. Paul and held that position until 1880 when he was transferred to the auditing department. He was appointed a general office clerk in the auditing department of the Northern Pacific in 1884 and was promoted to passenger and ticket agent at Minneapolis in 1888. Mr. Austin was promoted to assistant general passenger agent, with headquarters at St. Paul, in 1888 and continued in that capacity until June, 1897, when he was appointed general passenger agent of the Baltimore & Ohio, lines west of the Ohio river, with headquarters at Chicago. Mr. Austin remained in that position until his retirement in 1920.